SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1918.

No. 18, Original.

STATE OF MINNESOTA, COMPLAINANT,

vs.

STATE OF WISCONSIN.

IN EQUITY.

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1 At the Capitol of the United States in the City of Washington, and District of Columbia, being the present seat of the National Government of the United States on the second Monday of October (being the ninth day of the same month) in the year of our Lord one thousand nine hundred and sixteen and of the Independence of the United States the one hundred and forty-first, the Supreme Court of the United States met agreeably to law.

2 And on the same day, to-wit, on the 9th day of October A. D. 1916, the following entry appears of record, viz:

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

Mr. Lyndon A. Smith, of counsel for the complainant submitted to the consideration of the Court a motion for leave to file a bill of complaint in this cause.

October 9, 1916.

Which said motion is in the words and figures following, viz:

3 In the Supreme Court of the United States, October Term, 1916.

No. —, Original.

In Equity.

THE STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

Motion for Leave to File Bill of Complaint.

Now comes the State of Minnesota, by Lyndon A. Smith, its Attorney General and its solicitor, and moves the court for leave to file the bill of complaint herewith exhibited in a controversy which has arisen between the State of Minnesota, the complainant therein, and the State of Wisconsin, the defendant therein, concerning the boundaries and jurisdiction of said States, and that the proper process directed to the defendant may be issued thereon.

LYNDON A. SMITH,
Attorney General of the State of Minnesota, Solicitor for Complainant.

And afterwards, to-wit, on the 16th day of October, A. D. 1916, the following entry appears of record, viz:

4 THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

On consideration of the motion for leave to file a bill of complaint herein,

It is now here ordered by the Court that the *that the* said motion be, and the same is hereby, granted, and that process issue returnable on the first Monday in March next.

October 16, 1916.

And afterwards, to wit, on the 23d, day of October, A. D. 1916, an appearance was entered for complainant as follows, viz:

5 *Order for Appearance.*

Supreme Court of the United States, October Term, 1916.

No. 24, Orig'l.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN.

The Clerk will enter my appearance as Counsel for the Complainant:

(Name) LYNDON A. SMITH,
(P. O. Address) *St. Paul, Minn.*

H. P. FRYBERGER,
Duluth, Minn.

☞NOTE.—Must be signed by a member of the Bar of the Supreme Court United States. Individual and not firm names must be signed.

Endorsed: Supreme Court U. S. October Term, 1916. Term No. 24 Original. Appearance for Complainant. Filed Oct. 23, 1916.

6 And on the same day, to wit, on the 23d day of October A. D. 1916, the Bill of Complaint was filed in words and figures following, viz:

7 In the Supreme Court of the United States, October Term, 1916.

No. —, Original.

In Equity.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

Bill of Complaint.

To the Honorable the Chief Justice and Associate Justices of the Supreme Court of the United States:

The State of Minnesota, one of the United States of America, by Lyndon A. Smith, the duly elected, qualified, and acting Attorney General thereof, brings this bill of complaint against the State of Wisconsin, also one of the United States of America, and your orator complains and alleges:

1. That your orator, the State of Minnesota, is one of the States of the union of States constituting and forming the United
8 States of America; that under and by virtue of an act of the Congress of the United States of America, approved February 26th, 1857, being an act authorizing the establishment of a State government for the then proposed State of Minnesota (11 U. S. Stat. at Large, p. 166), and an act of the Congress of the United States of America approved May 11, 1858, being an act admitting the State of Minnesota into the Union (11 U. S. Stat. at Large, p 285), your orator was, on said last-mentioned date, admitted to the union of States constituting the United States of America upon an equal footing with the original States in all respects whatsoever.

2. That the defendant, State of Wisconsin, is also one of the union of States constituting and forming the United States of America; that under and by virtue of an act of Congress approved August 6, 1846, being an act to enable the people of Wisconsin Territory to form a constitution and State government, and for the admission of such State into the Union (9 U. S. Stat. at Large, p. 56), and an act of Congress approved May 29th, 1848, entitled "An act for the admission of the State of Wisconsin into the Union" (9 U. S. Stat. at Large, p. 233), the defendant, State of Wisconsin was admitted to be one of the United States of America on an equal footing with the original States in all respects whatsoever, with the boundaries prescribed by the said act of Congress approved August 6th, 1846.

3. That under and pursuant to the act of Congress approved August 6th, 1846, and by section 1 thereof the boundaries of the proposed State of Wisconsin, so far as it is relevant to the matters herein in controversy, reads as follows:

"Thence through the center of Lake Superior to the mouth of Saint Louis River; thence up the main channel of the Saint Louis River to the first rapids of the same above the Indian Village, according to Nicollet's map";

That the boundary so described still constitutes and forms a part of the boundary of the State of Wisconsin and is described in the same words in the Constitution approved by an act approved May 29th, 1848, entitled "An act for the admission of the State of Wisconsin into the Union" (9 U. S. Stat. at Large, p. 235).

4. That under and pursuant to the act of Congress approved February 26th, 1857, and by section 1 thereof the boundaries of the proposed State of Minnesota, so far as it is relevant to the matters herein in controversy, reads as follows:

"Thence up the main channel of said River (Mississippi), and following the boundary line of the State of Wisconsin, until the same intersects the Saint Louis River; thence down said river to and through Lake Superior on the boundary line of Wisconsin and Michigan";

That the boundary so described still constitutes and forms a part of the boundary of the State of Minnesota, and is described in the same words in the Constitution approved by an act approved May 11th, 1858, being an act entitled "An act for the admission of the State of Minnesota into the Union" (11 U. S. Stat. at Large, p. 285).

5. That said Saint Louis River flows in a more or less easterly and westerly direction at the place where it forms the boundary between the States of Minnesota and Wisconsin; that the westerly end of Lake Superior is divided up into various bays and inlets, among which are the Bay of Superior, Pokegama Bay, Kimball's Bay, and Saint Louis Bay; that portion of Saint Louis Bay lying westerly of what is known as Grassy Point being known as Upper and that portion lying easterly of Grassy Point being known as Lower Saint Louis Bay. There is a dispute between the State of Minnesota and the State of Wisconsin as to what comprises the boundary line between said States upon Upper Saint Louis Bay and Lower Saint Louis Bay; the State of Minnesota being to the north of said bays and the State of Wisconsin being to the south of said bays, Duluth, St. Louis County, Minnesota, fronting upon said bays upon the north and the city of Superior, Douglas County, Wisconsin, fronting upon said bays upon the south.

6. At the time the boundaries for the State of Wisconsin were determined according to the acts of Congress hereinbefore referred to the waters of Upper and Lower Saint Louis bays were on an average from five (5) to nine (9) feet in depth, and in some places there were holes or depressions where the water reached the depth of twenty-two (22) feet, but said depressions were not continuous. Practically all of Upper and Lower Saint Louis bays between the shores were navigable for such vessels as were accustomed to use said bays at said time for the purpose of navigation, and there was no defined course, or channel, in said bays, which said vessels fol-

lowed, but, owing to the depth of the water, they were permitted and accustomed to travel across said bays in any direction. The waters of Saint Louis River merged into the waters of Lake Superior at the westerly end of Upper Saint Louis Bay.

7. On December 5th, 1894, the War Department of the United States of America, under and pursuant to an act of Congress approved September 19th, 1890, duly established dock lines on the Minnesota and Wisconsin sides of Upper and Lower Saint Louis bays, said dock lines being established in aid of navigation.

8. On November 17th, 1899, the War Department of the United States of America, under and pursuant to an act of Congress approved June 13th, 1892, an act of Congress approved June 3d, 1896,
11 and an act of Congress approved March 3d, 1899, duly established dock lines on the Minnesota and Wisconsin sides of said Upper and Lower Saint Louis bays. The dock line so established was at some points nearer and at some points further away from the respective shores than the dock lines previously established. That at said time the property hereinafter referred to and in dispute between said States, and in fact all the dock property fronting upon said established dock lines in said Upper Saint Louis Bay, and all of said submerged land, was largely in a wild, unimproved condition and without any permanent improvement, and very largely without any improvement whatsoever, either permanent or temporary, and that all of the improvements hereinafter referred to upon said property were erected after the establishment of said Government dock line and with relation thereto and in reliance upon the same.

9. That since the establishment of said Government dock line in the year 1899 many of the owners of the shore lands in Minnesota on the northerly side of Saint Louis Bay have constructed wharves and made other valuable and extensive improvements in improving the property out to the dock line last established on the north side of Saint Louis Bay, these improvements aggregating in value many millions of dollars. The parties so improving their property and constructing docks and slips thereon did so under the claim of ownership based on their title to the Minnesota shore lands and under the belief that they were making improvements within the territorial boundaries of the State of Minnesota. That said improvements consist, among other things, of coal docks and docks in connection with furnace plants, and that the same are of the most modern and permanent type and put in at large expense and extend out to said established dock line, and that the same were erected for the handling of coal and other products for delivery by boat upon the Great Lakes and transferred by means of said docks to cars for trans-
12 portation to a large part of the Northwest, and that it is impossible to operate said docks without access to said Government dock line and the channel dredged out beyond said Government dock line, and that upon said docks, from time to time, there are stored large quantities of coal and other material, and that large operations are carried on upon said docks and a large number of men employed in connection therewith.

10. It is claimed by the State of Wisconsin that the boundary of

the State of Wisconsin through said Upper and Lower Saint Louis bays extends northerly of the north dock line as established in said Upper and Lower Saint Louis bays.

11. That complainant herein maintains and always has maintained that the boundary line of the State of Minnesota and the State of Wisconsin, through said Upper and Lower Saint Louis bays, is, through the center of said bays in accordance with the enabling acts hereinbefore referred to.

12. That all of the submerged land lying between said north dock line and the upland of Minnesota and all improvements thereon have at all times been taxed by the taxing officials of the State of Minnesota, and taxes paid thereon to the State of Minnesota, and the same has been policed by the officials of said State, and both civil and criminal jurisdiction of said improved property has been had by the courts of said State and by the courts of the United States for the District of Minnesota, and none of the powers hereinbefore in this paragraph set forth has been questioned by any party whatever, except as to taxes commencing in the year 1913, and that as to taxes the question thereto has been raised by the taxing authorities of the State of Wisconsin, and that prior to said year 1913 no claim was ever made by said State of Wisconsin, nor by the taxing au-
13 thorities thereof, nor by any other person, party or corporation, municipal or otherwise, as to said disputed property, nor was any attempt made to exercise jurisdiction, either civil or criminal, or for taxation purposes, over said property prior to said time, and that said State of Wisconsin and the taxing authorities thereof and the owners of the property upon the Wisconsin side opposite thereto made no objection to the building of said improvements, or to the use of the same, although the same was made to their full knowledge, and that no claim was made to the same, or the right to tax the same, or the personal property thereon, or the real estate, until after said improvements had been made.

13. That since the year 1913 the officials having charge of the matter of assessing, levying, and collecting taxes under and by virtue of the laws of the State of Wisconsin have attempted to assess, levy, and collect taxes upon the improved real and the personal property situated between the north dock lines as established in the year 1899 and the boundary line as claimed by the State of Wisconsin, and that the authorities of the State of Wisconsin now are attempting to exercise rights of sovereignty both as to taxes and as to criminal and civil jurisdiction over said premises.

14. Many of the improvements made as hereinbefore described, were made as much as fifteen years ago, and it has been a matter of great embarrassment, inconvenience, and trouble to those owning property between said north dock line established in the year 1899 and the boundary line as claimed by the State of Wisconsin since the year 1913, when the authorities of the State of Wisconsin commenced attempting to assess, levy and collect taxes upon both the improved real and the personal property situated as above described, and many of the owners, fearing lest some rights of theirs would be jeopardized, have paid taxes upon said property both to the State

of Minnesota and to the State of Wisconsin, causing a double taxation on the same class of property for the same purposes and
14 to different States. That said taxes were paid under duress and because of threats made by said taxing authorities to sell the personal property upon said docks unless said taxes were paid, and that said owners have been and are being subjected to double taxation to avoid the sale of their said property, and that they are unable to ascertain the proper parties to whom said taxes should be paid, and that it is impossible to determine said question and have the same binding upon your orator and said defendant unless said question of said true boundary line be determined by this court.

15. The conflict of civil and criminal jurisdiction of the State courts and the courts of the United States upon said property also gives rise to a threatened great inconvenience.

16. Many of the parties owning property on said Upper and Lower Saint Louis bays have brought actions in the courts, which as yet are not finally determined, for the purpose of determining the ownership of the lands lying in the disputed territory above described, said action being based primarily upon the basic principle in the law known as riparian rights; one of the actions being brought by George W. Norton, Jr., as administrator of the estate of George W. Norton, deceased, vs. Zenith Furnace Company, the action being in ejectment for a part of said property. The plaintiff claiming that as owner of lands on the south side of Saint Louis Bay and in the State of Wisconsin his riparian rights extend to the boundary line as claimed by the State of Wisconsin and in said action seeks to eject the defendant from property worth many hundred thousands of dollars in value. This action has been commenced in the Circuit Court for Douglas County, Wisconsin. Another action has been commenced by Chartiers Mining Company to quiet title to lands, which it claims to own in said disputed territory by virtue of its ownership of land on the north side of Saint Louis Bay. Said action is brought against George W. Norton, as Executor, and is in
15 the nature of an action to quiet title, the plaintiff claiming that its riparian rights extend to the boundary line as claimed by the State of Minnesota and said action is now pending in the District Court for the Eleventh Judicial District, St. Louis County, State of Minnesota, and that still another action in similar form has been commenced by the Pittsburgh & Lehigh Dock Company in said court last mentioned to quiet title to a portion of said lands and said disputed territory, and which said action is likewise in the form of an action to quiet title under the claim of riparian rights, and which said action is against said last-named defendant.

17. Your orator is informed and believes that many parties owning lands both on the north and south sides of said Saint Louis Bay contemplate actions similar to those already commenced, with the result that there will be a great deal of confusion in the courts of the State of Minnesota and of the State of Wisconsin and of the United States, to which said cases may be removed, provided jurisdictional points for removal exist, and that the results may be diverse and conflicting and may result in one boundary line being established in

one action and another and conflicting boundary line in another action, and neither of the States of Minnesota or Wisconsin being parties thereto will be bound thereby.

18. That in the year 1911 the Legislature of the State of Minnesota, by a joint resolution of the House of Representatives and Senate, created a joint committee, consisting of three Representatives, to be designated by the Speaker, and two Senators, to be designated by the Lieutenant-Governor, to confer with a similar committee of the Legislature of the State of Wisconsin, if one should be appointed, to act in the matter of determining the boundary between the States of Minnesota and Wisconsin with reference to the waters near the mouth of the St. Louis River. Said committee was empowered to summon witnesses, compel the production of books and papers and take testimony in relation to said boundary dispute and was
16 directed to report to the Legislature any proposed settlement of the location of said boundary. The members of the committee were appointed, as therein provided, and thereafter the Legislature of the State of Wisconsin duly created a like committee to confer with the committee provided for by the Legislature of the State of Minnesota.

It was further provided by the Legislature of the State of Minnesota, by joint resolution of the House of Representatives and Senate, during the legislative session of 1911, that the period of service of said committee of the Legislature of the State of Minnesota be extended until the session of the Legislature of said State next ensuing after the then session thereof, and that during said period of extended service said committee be vested with all powers, duties and privileges originally conferred upon it, and that it make its report and recommendations to said next ensuing session of the Legislature.

That at special session of the Legislature of the State of Minnesota, held in the year 1912, it was, by joint resolution of the House of Representatives and Senate, provided that the period of service of said committee of the Legislature of the State of Minnesota be further extended until the regular session of the Legislature of said State next ensuing after the then session thereof and that during said period of extended service said committee be vested with all powers, duties, and privileges originally conferred upon it, and that it make its report and recommendation to such next ensuing session of the Legislature.

That thereafter the committee so created by the Legislatures of the States of Minnesota and Wisconsin met and organized as a joint commission and had a number of hearings and conferences, at which testimony was taken and an attempt made to reach a basis of agreement as to said boundary line, but without success. The last meeting of the joint commission of the two States was held on
17 December 18th, 1912, upon which date a joint report, signed by all of the members of the joint commission, consisting of five committeemen from each State, was made to the respective Legislatures of the State of Minnesota and the State of Wisconsin. Said report recommended the enactment of certain uniform laws relating to fishing upon the boundary waters between the two States, and

with reference to the matter of boundary line in dispute said joint report stated:

"The controversy existing between the two States concerning the boundary line is fundamental and substantial, and we find and determine that there is no opportunity for an adjustment of this controversy which does not involve a complete surrender by one or the other of the States of its position and contention with reference thereto. We therefore agree that this commission can arrive at no satisfactory adjustment of these differences."

That thereafter, on the 3d day of February, 1913, the report of said joint boundary commission was presented to the Legislature of the State of Minnesota by the committee created by said Legislature, and said joint boundary commission then ceased to exist without having arrived at any agreement or settlement of the controversy theretofore and still existing between the two States as to the location of said boundary line.

That no further action has been taken by the Legislature of the State of Minnesota with reference to settling such controversy.

19. That it is desirable and necessary to the orderly and efficient enforcement and administration of the laws of each of said States and of the United States that the location of the boundary line between them, where the same extends through said Saint Louis Bay, be authoritatively and finally settled and determined.

18 20. That the controversy herein involves questions of the jurisdiction and sovereignty of your orator and that there is no adequate remedy at law.

Wherefore your orator prays that the defendant may be required to answer the allegations hereinbefore set forth in this bill; that upon final hearing of this cause the boundary line between the said States be ascertained and established by decree of this court as it is hereinbefore claimed to be by your orator; that the rights of your orator to the possession, jurisdiction, and sovereignty over the waters of said Saint Louis Bay, so-called, northerly of such boundary, be quieted, and the defendant forever enjoined and restrained from disturbing your orator and its officers in its sovereignty and jurisdiction over the same and the possession and enjoyment thereof by the people of the State of Minnesota, and for such other and further relief as to this honorable court may seem meet and consistent with equity and good conscience.

May it please your honors to grant unto your orator a writ of subpœna under the seal of this honorable court directed to the Governor and Attorney General of the defendant, the State of Wisconsin, commanding them, on a day certain to be therein named and under a certain penalty, to be and appear in this honorable court, then and there to answer, but not under oath (answer under oath being expressly waived), on behalf of the defendant, all and singular the matters and things hereinbefore set forth, and on behalf of the defendant to stand to, perform, and abide such further order, direction and decree as may be made against the defendant.

And your orator will ever pray.

LYNDON A. SMITH,
Attorney General of the State of Minnesota.

19 UNITED STATES OF AMERICA,
State of Minnesota,
County of Ramsey, ss:

Lyndon A. Smith, being duly sworn, deposes and says that he is the duly elected, qualified, and acting Attorney General of the State of Minnesota; that he has read the foregoing bill of complaint and knows the contents thereof; that as such Attorney General he is authorized to pray leave to file the same, and that the same is true as he verily believes.

LYNDON A. SMITH.

Subscribed and sworn to before me this 29th day of September, 1916.

[SEAL.]

G. K. SPANGENBERG,
Notary Public, Ramsey County, Minn.

My commission expires March 11, 1922.

[Endorsed:] Copy. In the Supreme Court of the United States, October term, 1916. No. —, Original. State of Minnesota, complainant, vs. State of Wisconsin, defendant. Lyndon A. Smith, Attorney General, State of Minnesota.

Office Supreme Court, U. S. Filed Oct. 23, 1916. James D. Maher, clerk.

And afterwards, to-wit, on the 25th day of October, A. D. 1916, the subpœna was issued to the Marshal.

And afterwards, to-wit, on the 2d day of November, A. D. 1916, the subpœna and Marshal's return were filed in words and figures following, viz:

20 THE UNITED STATES OF AMERICA, *ss:*

[SEAL.]

The President of the United States to the State of Wisconsin, Greeting:

For certain causes offered before the Supreme Court of the United States, having jurisdiction in equity, you are hereby commanded that, laying all other matters aside and notwithstanding and excuse, you be and appear before the said Supreme Court, holding jurisdiction in Equity, on Monday March 5th, 1917, at the City of Washington, in the District of Columbia, being the Seat of the National Government of the United States, to answer unto a bill of complaint of the State of Minnesota in the said Court exhibited against you.

Hereof you are not to fail at your peril.

Witness the Honorable Edward D. White, Chief Justice of the

United States, at the City of Washington, the 25th day of October A. D. 1916.

JAMES D. MAHER,
Clerk of the Supreme Court
of the United States.

Service of the above subpœna and a certified copy of the Bill of Complaint therein mentioned are this 31st day of October A. D. 1916, accepted and acknowledged.

EMANUEL L. PHILIPP,
Governor of the State
of Wisconsin.

W. C. OWEN,
Attorney General of the
State of Wisconsin.

WALTER DREW,
Deputy Attorney General of
the State of Wisconsin.

21 Office of the Marshal, Supreme Court, U. S.

Came to my hand the 26th day of Octomer 1916, and executed through acceptance of service in writing herein by the Governor of the State of Wisconsin and the Attorney General of the State of Wisconsin by Walter Drew, Deputy Attorney General of the State of Wisconsin on the 31st day of October A. D. 1916.

Witness my hand this 2d day of November, 1916, At the City of Washington.

FRANK K. GREEN,
Marshal, Supreme Court U. S.

Endorsed: Supreme Court U. S. October Term, 1916. 24 Original. The State of Minnesota, Complainant, vs. State of Wisconsin. Subpœna and Marshal's return as to service. Filed Nov. 2d, 1916.

And afterwards, to-wit, on the 6th day of March, A. D. 1917, appearances were entered for defendant as follows, viz:

22 *Order for Appearance.*

Supreme Court of the United States.

No. 24 Orig'l, October Term, 1916.

THE STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN.

The Clerk will enter my appearance as Counsel for the defendant.
(Name) WALTER C. OWEN,
(Po. O. Address) *Attorney General of the State of Wisconsin.*

☞NOTE.—Must be signed by a member of the Bar of the Supreme Court United States. Individual and not firm names must be signed.

Endorsed: Supreme Court U. S. October Term, 1916. Term No. 24 Orig'l. Appearance for defendant. Filed Mar. 6, 1917.

23 *Order for Appearance.*

Supreme Court of the United States.

No. 24 Orig'l, October Term, 1916.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

The Clerk will enter my appearance as Counsel for the defendant.
(Name) WALTER DREW,
(P. O. Address) *Deputy Attorney General of the State of Wisconsin.*

☞NOTE.—Must be signed by a member of the Bar of the Supreme Court United States. Individual and not firm names must be signed.

Endorsed: Supreme Court U. S. October Term, 1916. Term No. 24 Orig'l. Appearance for defendant. Filed Mar. 6, 1917.

24 And on the same day, to wit, the 6th day of March, A. D. 1917, the answer & counterclaim of defendant was filed in words & figures following, viz:

In the Supreme Court of the United States, October Term, 1916.

No. 24, Original. In Equity.

STATE OF MINNESOTA, Plaintiff,

v.

STATE OF WISCONSIN, Defendant.

Answer and Counterclaim.

To the Honorable the Chief Justice and Associate Justices of the Supreme Court of the United States:

The State of Wisconsin, the defendant above named, and one of the United States of America, by Walter C. Owen, attorney general thereof, and Walter Drew, deputy attorney general thereof, its solicitors, for answer and counterclaim to the bill of complaint herein, or unto so much and such parts hereof as the defendant is advised it is necessary or material for this defendant to make answer unto, answering and counterclaiming against said complainant, respectfully alleges and shows to the court:

1. The defendant admits that the complainant, State of
25 Minnesota, is one of the states of the United States of America duly admitted as such into the Union, upon an equal footing with the original states in all respects whatsoever, under and by virtue of the Act of Congress approved February 26, 1857 (11 U. S. Stat. at Large, p. 166), and the Act of Congress approved May 11, 1858 (11 U. S. Stat. at Large, p. 258).

2. The defendant admits and avers that the State of Wisconsin is one of the states of the Union duly admitted thereto on an equal footing with the original states in all respects whatsoever, under and by virtue of an Act of Congress approved Augusut 6, 1846 (9 U. S. Stat. at Large, p. 56), and an Act of Congress approved May 29, 1848 (9 U. S. Stat. at Large, p. 233).

3. The defendant admits that, by the said Act of Congress approved August 6, 1846, and by the Constitution of the State of Wisconsin adopted pursuant thereto and by the Act approved May 29, 1848, entitled "An Act for the admission of the State of Wisconsin into the Union" (9 U. S. Stat. at Large, p. 233), the boundary of the State of Wisconsin was fixed in part as alleged in said bill, and alleges that the said boundary, so far as here material, was, in and by said Acts of Congress and said Constitution of the State of Wisconsin, fixed, established and described, and has ever since continued to be as follows:

"Thence through the center of Lake Superior to the mouth of the St. Louis river; thence up the main channel of said river to the first rapids in the same above the Indian village, according to Nicollet's map; thence due south to the main branch of the river St. Croix; thence down the main channel of said river to the Mississippi; thence down the center of the main channel of that river to the northwest corner of the State of Illinois."

26 4. The defendant admits that under and pursuant to the Act of Congress approved February 26, 1857, the boundaries of the proposed State of Minnesota, so far as relevant to the matters herein in controversy, were declared, fixed and described as follows:

"Thence up the main channel of said river, and following the boundary line of the State of Wisconsin until the same intersects the St. Louis river; thence down said river to and through Lake Superior on the boundary line of Wisconsin and Michigan."

And that said boundary, so described, constitutes and forms a part of the boundary of the State of Minnesota.

5. The defendant denies that the St. Louis river flows "in a more or less easterly and westerly direction at the place where it forms the boundary between the states of Minnesota and Wisconsin," and avers that said St. Louis river flows only in an easterly direction at the place where it forms the boundary between the states of Minnesota and Wisconsin; and the defendant denies that the westerly end of Lake Superior is divided up into various bays and inlets, among which are the Bay of Superior, Pokegama Bay, Kimball's Bay, and St. Louis Bay, and denies that a part of St. Louis Bay lying west of Grassy Point, or any part thereof, is known as Upper St. Louis Bay, and denies that that part of St. Louis Bay lying easterly of Grassy Point, or any part thereof, is known as Lower St. Louis Bay; and defendant alleges and avers that parts of the waters of St. Louis river are sometimes known as and called by the names of Bay of Superior, Pokegama Bay, Kimball's Bay and St. Louis Bay. The defendant admits that there is a dispute between the State of Minnesota and the State of Wisconsin as to what comprises the boundary line between said states in the waters of St. Louis river, sometimes called,
27 as aforesaid, St. Louis Bay, the State of Minnesota being to the north, and the State of Wisconsin being to the south of said waters, Duluth, St. Louis County, Minnesota, fronting upon said waters upon the north, and the City of Superior, Douglas County, Wisconsin, fronting upon said waters on the south shore.

6. The defendant admits that at the time the boundaries of the State of Wisconsin were determined, fixed and described, as aforesaid, the waters of St. Louis river, in the parts and localities thereof sometimes called St. Louis Bay, were in depth on an average from five to nine feet, and in some places reached the depth of twenty-two feet, but defendant denies that practically all of said waters were navigable for such vessels as were accustomed to use said waters at said time, and alleges that said waters were not at said time or since, navigable from shore to shore or in all directions, and that, on the contrary, there was a well-known main channel in said waters followed commonly by navigation, and that said main channel lay and was substantially north of the center of said waters and nearer to the north shore line thereof than to the south shore line thereof. The defendant denies that the waters of St. Louis river merged into the waters of Lake Superior at the westerly end of St. Louis Bay or of any part thereof, and avers that the waters called St. Louis Bay, and the whole thereof, are and ever have been a part of St. Louis river, and that the waters of St. Louis river flow, empty and merge into the waters of Lake Superior at the place between the headlands known

respectively as Wisconsin Point, on the south shore, and Minnesota Point, on the north shore, said place and location being a place several miles to the east of said waters of St. Louis river called St. Louis Bay.

28 7. The defendant admits that on December 5, 1894, the War Department of the United States, pursuant to an Act of Congress, approved September 19, 1890, established dock lines in said St. Louis river and the parts thereof known as St. Louis Bay. The defendant admits that on November 17, 1899, the War Department of the United States, pursuant to Acts of Congress approved June 13, 1892, June 3, 1896, and March 3, 1899, established dock lines in said St. Louis river, and the parts thereof known as St. Louis Bay, and that said dock lines, so established, were at some points nearer, and at some points farther away from the respective shores than the dock lines previously established; and the defendant admits that all of the submerged land within said dock lines, and particularly the submerged land lying and being between the north dock line, as so established, and the north shore of said St. Louis river, was largely in a wild, unimproved condition and without any permanent improvement, or any improvement whatsoever, and that the improvements on said lands referred to in said bill of complaint were erected after the establishment of said dock line, but the defendant denies that the same were erected in relation to or in reliance upon said dock line, or that the parties who erected the same were lawfully entitled to do so, either in relation to or in reliance upon said dock line.

8. The defendant denies that since the establishment of said dock line in the year 1899 many of the owners of shore lands in Minnesota have constructed wharves and made other and valuable and extensive improvements in improving property out to said north dock line, so established, on the north side of said St. Louis Bay, so-called, but admits that two of the owners of shore lands in Minnesota have constructed wharves and made valuable and extensive im-

29 provements extending from the Minnesota shore out toward said dock line, and that said improvements consist of coal docks and docks in connection with furnace plants, and that the same were put in at large expense for the purpose of handling coal and other products for delivery by boat upon the Great Lakes, and for transferring the same to cars for rail transportation, and that upon said docks are stored, from time to time, large quantities of coal and other materials, and that large operations are carried on upon said docks and a large number of men employed in connection therewith; but defendant denies that the parties constructing said docks did so under the claim of ownership of the land upon which the same were constructed, or so much thereof as lay to the south of the main channell of the St. Louis river, and denies that said parties constructed said improvements under the belief that they were constructed within the territorial boundaries of the State of Minnesota, and alleges that said improvements were so constructed and are maintained from the Minnesota shore across the main channel of the St. Louis river and extending to the south of said main channel of the St. Louis river, and alleges that the parties so constructing the same well knew that

the said improvements, and so much thereof as lay across, beyond and to the south of the main channel of the St. Louis river were within the State of Wisconsin and upon land to which they had no title in law, and upon land the ownership of which was in the owners of the lands on the south or Wisconsin side of the St. Louis river.

9. The defendant admits that it claims that the boundary of the State of Wisconsin, through said St. Louis river and through the waters thereof called St. Louis Bay and by the complaint
30 herein Upper and Lower St. Louis Bays, extends northerly of the dock line, as established by the War Department in 1899 as aforesaid, and defendant avers and maintains that it has ever claimed that the boundary of the State of Wisconsin, in said waters, was and is the main channel of the St. Louis river therein, and the defendant alleges that the said main channel of the St. Louis river is, in said places and in said locality, at all points northerly of said north dock line being to the north thereof by varying distances, and at some places as much as fifteen hundred feet to the north of said dock line.

10. The defendant admits that the complainant, at this time, claims that the boundary line of the State of Minnesota and the State of Wisconsin, through the waters of St. Louis river, designated by said complainant as Upper and Lower St. Louis Bays, is through the center of said bays, so-called, that is to say, that said boundary line is the line equidistant between the north and south shores of said waters; but defendant denies that complainant has always so claimed or maintained, and denies that said claim of complainant as now made is legally or equitably maintainable under said enabling acts of Congress referred to in said bill of complaint

11. The defendant denies that all of the submerged land lying between said north dock line and the upland of Minnesota, and all improvements thereon, have, at all times, been taxed by the taxing officials of the State of Minnesota, and taxes paid thereon to the State of Minnesota, and denies that the same has been policed by officials of said state, and both civil and criminal jurisdiction thereof had by the courts of said state, except as said state has, together with the State of Wisconsin, under and by virtue of said enabling acts of Congress, concurrent jurisdiction of said waters, and the defend-
31 ant alleges that neither complainant nor the taxing officials of complainant have or have ever had lawful authority to tax any of said submerged lands lying to the north of said dock line and between said dock line and the main channel of the St. Louis river to the north thereof, and denies that the complainant, or the taxing officials of complainant, have ever, until the past few years, assumed to tax any of said submerged lands, save and except as the taxation thereof was included in the taxation of the upland to which the same were appurtenant. The defendant admits that the rights and powers exercised or assumed to be exercised, if any, by the complainant or its taxing officers, were not challenged by the defendant or its taxing officers prior to the year 1913, but alleges that the defendant at all times had and has at all times exercised power and authority to tax, and has assessed and taxed as pertinent to the up-

land on the south shore of said waters all of said submerged lands north of said north dock line and lying and being between said north dock line and the main channel of the St. Louis river in said waters, and further alleges that, prior to recent years, there were no structures, improvements or personal property erected, constructed or located on said submerged land lying between said north dock line and the main channel of said St. Louis river, which might be subject to assessment for taxation or taxation by the State of Wisconsin or its taxing officers, other than said submerged land so assessed and taxed by the defendant and its taxing officers, as aforesaid, and further alleges that the first of said improvements, structures or docks was only erected in or about the year 1905, and the second of said improvements, structures or docks only erected in or about the year 1910; and further avers that the defendant, through its taxing officers, has, in the year 1913 and at all times since, asserted and exercised its power, authority and jurisdiction, both civil and criminal, and has assessed for taxation and taxed all said permanent improvements erected on said submerged land, together with the personal property thereon, lying and being situate north of said north dock line and between said dock line and the main channel of said St. Louis river, and has assessed for taxation and taxed said improvements and personal property separately and to the owners thereof, and further alleges that the defendant, through its taxing officials and otherwise, has at all times objected to the taxation thereof or the assumption of any jurisdiction thereover by the complainant, or any of its officers or agents, for the reason and upon the ground that said structures, docks, improvements and personal property, and said submerged land lying and being situate north of said north dock line and between said dock line and the main channel of the St. Louis river were and are within the territorial jurisdiction of the State of Wisconsin.

32

12. The defendant admits that, since the year 1913, the taxing officials of the defendant have attempted to assess, levy and collect taxes upon the improved real and personal property situate between the north dock line, as established in the year 1899, and the boundary line as claimed by the defendant, and that the authorities of the defendant are attempting to exercise rights of sovereignty both as to taxes and as to criminal and civil jurisdiction over said premises, and alleges that the defendant, through its said officials, has, in fact, and lawfully, assessed, levied and collected taxes upon said property for many years last past, and in the manner hereinbefore stated, and has at all times, and as hereinbefore stated, asserted and exercised the rights of sovereignty both as to taxes and as to criminal and civil jurisdiction over said premises as it had lawful right and authority to do under and by virtue of said enabling acts, for the reason that the same were and are within the territorial jurisdiction of said defendant.

33

13. The defendant denies that many of the improvements referred to in said bill of complaint were made as much as fifteen years ago, and denies that any considerable part of said improvements were

made as much as fifteen years ago, but admits that one of the docks or wharves constituting said improvements was built about the year 1905, and the other of the said docks or wharves, constituting the rest, or substantially the rest of said improvements was erected about the year 1910, and admits that there has been double taxation and embarrassment and inconvenience to the parties owning or claiming to own property between said north dock line and the boundary line as claimed by the defendant, and alleges that said double taxation, embarrassment and inconvenience to said parties grows out of and is due to the unlawful acts of the complainant, its officers and agents, in creating a controversy and in setting up and asserting a claim of jurisdiction and assuming to exercise civil and criminal jurisdiction over, and to assess and collect taxes upon land and improvements and property north of said north dock line and lying and being situate between said north dock line and the main channel of the St. Louis river, and within the territorial jurisdiction of the State of Wisconsin.

14. The defendant admits that the conflict of civil and criminal jurisdiction of the courts of the State of Minnesota and the State of Wisconsin, and the courts of the United States, upon said
34 lands and property, gives rise to a threatened great inconvenience, but avers that said conflict and said threatened great inconvenience are due and chargeable to the controversy made and claims asserted and set up by the unlawful acts of the complainant and of its servants and agents as aforesaid.

15. The defendant admits that some of the parties owning property on the waters of said St. Louis river, known as St. Louis Bay, have brought actions in courts which are as yet not finally determined, for the purpose of attempting to determine or acquire the ownership of lands lying in the disputed territory above described, and that one of said actions has been brought by George W. Norton, Jr., as administrator of the Estate of George W. Norton, Deceased, v. The Zenith Furnace Company, being an action in ejectment for a part of said property, and that said action has been commenced in the circuit court for Douglas County in the State of Wisconsin; and admits that another action has been commenced by Chartiers Mining Company v. George W. Norton, as Executor, as an action to quiet title, said action being commenced in the district court for the eleventh judicial district, St. Louis County, State of Minnesota; and that another action of similar form has been commenced in said last mentioned court by the Pittsburg & Lehigh Dock Company, all of which said actions, this defendant alleges, affect the title to lands and improvements thereon north of said north dock line and lying and being situate between said north dock line and the main channel of the St. Louis river, and within the territorial jurisdiction of the State of Wisconsin, and this defendant further alleges that the said court of the complainant, the district court for the eleventh judicial district of the State of Minnesota, has unlawfully and in viola-
35 tion of the sovereignty and jurisdiction of this defendant, assumed, asserted and attempted to exercise jurisdiction to try and determine, in two of said actions, the right and title in and to

said lands and property so situate, as aforesaid, within the territorial jurisdiction of the State of Wisconsin.

16. The defendant has neither knowledge nor information upon which to form a belief as to whether many parties owning lands both on the north and south sides of said St. Louis Bay, so-called, contemplate actions similar to those already commenced, but admits that the bringing and prosecution of such actions, if the same shall be brought and prosecuted, will result in a great deal of confusion in the courts of the states of Minnesota and Wisconsin and of the United States to which said cases, or some of them, may be removed, provided jurisdictional grounds for removal exist, and that the results of such litigation, may be diverse and conflicting and may result in one boundary line being held in one action and another and conflicting line being held in another action, and admits that neither the State of Wisconsin nor the State of Minnesota, being parties thereto, will be bound thereby.

17. The defendant admits the adoption of joint resolutions by the legislatures of the states of Minnesota and Wisconsin, in the year 1911, creating a joint commission for the consideration and for the purpose of recommending to the said legislatures any possible basis of settlement which might be found of the said boundary controversy between the said states, and admits that the said joint commission reported that it was able to arrive at no satisfactory adjustment of said controversy, substantially and in form as alleged in said bill of complaint.

36 18. The defendant admits that it is desirable and necessary to the orderly and efficient enforcement and administration of the laws of each of said states, and of the United States, that the location of the boundary line between them, where the same extends through said St. Louis Bay, so-called, being that part of the St. Louis river sometimes known as St. Louis Bay, be authoritatively and finally settled and determined, and admits that the controversy herein involves the question of the jurisdiction and sovereignty of the complainant, the State of Minnesota, and that there is no adequate remedy at law, and avers and alleges that the said controversy herein involves questions of the jurisdiction and sovereignty of this defendant, the State of Wisconsin, and that this defendant is without adequate remedy at law.

And defendant denies all and all manner of unlawful acts whatsoever whereof it is in any wise by the said bill of complaint charged.

19. Further answering, and by way of counterclaim and, by reference, realleging the allegations in that behalf hereinbefore set forth, this defendant further alleges that the boundary of the State of Wisconsin and of the State of Minnesota in the St. Louis river, and in that part of St. Louis river sometimes called St. Louis Bay, is, by the said enabling acts of Congress, and particularly the Act of August 6, 1846, determined, described and fixed, and at all times since the approval of said acts and the admission of the State of Wisconsin into the Union, still is the thread or center of the main channel of the St. Louis river, in said waters, and that the main channel of the said St. Louis river, in the waters thereof called St. Louis Bay, at all times was and, save as the same has been obstructed or diverted

by the construction of the docks, hereinbefore mentioned, and
37 by the dredging of said river subsequent to the year 1899, still
is varying and considerable distances north of said north dock line as established by the War Department in 1899, as aforesaid, and that the controversy and dispute as to the jurisdiction, civil and criminal and for purposes of taxation, of the State of Wisconsin over the lands and property north of said dock line and lying and being situate between said dock line and the main channel of said St. Louis river, is a controversy originated, provoked and created by the officers and agents of the complainant herein, without merit, lawful cause or equity in support thereof, and that the said unlawful acts and claims of the said officers and agents of the complainant have been by the complainant affirmed, ratified and adopted to and for the unlawful benefit and advantage of the complainant, all of which said acts of said complainant and of its officers and agents are and have been in violation of the rights and sovereignty and lawful authority of the defendant State of Wisconsin.

Of all which matters and things this defendant is ready and willing to prove, as this Honorable Court shall direct.

Wherefore, the defendant prays that, upon final hearing of this cause, the boundary line between the said states be ascertained, defined and declared by decree of this court as it is hereinbefore claimed to be by the defendant, and that the rights of the defendant to the possession, jurisdiction and sovereignty over the waters of said St. Louis river, or St. Louis Bay, so-called, northerly of the said north dock line as far as the center of the main channel of the said St. Louis river, and over all the waters, lands and improvements lying southerly ow the center of said main channel, be in all things quieted
and confirmed unto the defendant, and that the complainant
38 be forever enjoined and restrained from disturbing the defendant and its officers in the exercise of its sovereignty and jurisdiction over the same and the enjoyment and possession thereof, and for such other and further relief as to this Honorable Court may seem meet and consistent with equity and good conscience, and also that the defendant have and recover against the complainant its reasonable costs and charges in this behelf most wrongfully sustained.

WALTER C. OWEN,
Attorney General of the State of Wisconsin;
WALTER DREW,
Deputy Attorney General of the State of Wisconsin,
Solicitors for the Defendant.

Office Supreme Court U. S. Filed Mar. 6, 1917. James D. Maher, Clerk.

And afterwards, to wit, on the 18th day of April, A. D. 1917, a stipulation as to filing reply, was filed in words & figures following viz:

39 Supreme Court of the United States.

No. 24, Original Action.

STATE OF MINNESOTA, Plaintiff,

vs.

STATE OF WISCONSIN, Defendant.

It is hereby stipulated and agreed by and between the Honorable Walter C. Owen, Attorney General of Wisconsin and Lyndon A. Smith, Attorney General of Minnesota, that the reply in the above entitled action which has been served herein may be filed herein.

WALTER C. OWEN,
Attorney General of Wisconsin.
LYNDON A. SMITH,
Attorney General of Minnesota.

Dated April 16, 1917.

Endorsed: Supreme Court U. S., October Term, 1916. Term No. —. State of Minnesota, Complainant, vs. State of Wisconsin. Stipulation as to filing reply. Filed April 18, 1917.

And afterwards, to wit, on the 23d day of April A. D. 1917, the following entry appears of record viz:

40 No. 24, Original.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

On motion of Mr. Lyndon A. Smith of counsel for the complainant, leave is hereby granted to file a reply in this cause.
April 23, 1917.

Which said Reply is in the words & figures following, viz:

41 In the Supreme Court of the United States, October Term, 1916.

No. 24, Original. In Equity.

STATE OF MINNESOTA, Plaintiff,

vs.

STATE OF WISCONSIN, Defendant.

Reply.

To the Honorable the Chief Justice and Associate Justices of the Supreme Court of the United States:

The State of Minnesota, complainant herein and one of the United States of America, by Lyndon A. Smith, Attorney General thereof, its solicitor, for reply to the counterclaim set forth in the Answer herein, or unto so much or such parts thereof as the complainant is advised it is necessary or material for this complainant to make answer unto, replying respectfully alleges and shows to the court:

42 1. Denies that parts of the waters of St. Louis River are sometimes known as and called by the names of Bay of Superior, Pokegama Bay, Kimball's Bay and St. Louis Bay.

2. Denies that the waters of St. Louis Bay were not, at the times referred to in the complaint herein and in the answer herein, navigable from shore to shore or in all directions, and denies that there was any main channel, as alleged in the answer herein, north of the center of said waters and nearer to the north shore line thereof than to the south shore line thereof.

3. Denies that the waters called St. Louis Bay, and the whole thereof, are and ever have been, a part of St. Louis River, and that the waters of St. Louis River flow, empty and merge into the waters of Lake Superior at the place between the headlines known respectively as Wisconsin Point, on the south shore, and Minnesota Point, on the north shore, and denies that the place and location of the merger of the waters of St. Louis River into the waters of Lake Superior is several miles east of St. Louis Bay.

4. Denies that the improvements referred to in paragraph eight of the answer herein were so constructed and are maintained from the Minnesota shore across the main channel of the body of water designated as St. Louis River in said answer, and denies that the same extends to the south of, and that there is any, main channel in said body of water designated as St. Louis River in the answer herein, and denies that the parties so constructing the same knew that the said improvements, or that any part thereof, lay across, beyond and to the south of any main channel of said body of water desig-

43 nated St. Louis River in the answer herein, and that the same were within the State of Wisconsin and upon land to which they had no title in law, and upon land, the ownership of which, was

in the owners on the south or Wisconsin side of the body of water designated St. Louis River in the answer herein.

5. Denies that defendant has ever claimed that the boundary line of the State of Wisconsin, in the waters referred to in paragraph nine of said answer, was as claimed by defendant in paragraph nine of said answer, and denies that the main channel of the body of water referred to by defendant as St. Louis River is, if ever there was any main channel, in said places and in said locality, at all points northerly of said north dock line or that the same is now, or at any time was north thereof by varying distances.

6. Denies that neither the complainant nor the taxing officials of complainant have or have ever had lawful authority to tax any of said submerged lands lying to the north of said dock line and between said north dock line and alleged main channel of the body of water designated as St. Louis River to the north thereof, as alleged in paragraph eleven of the answer herein.

7. Denies that the defendant had and has at all times exercised power and authority to tax, and has assessed and taxed as pertinent to the upland on the south shore of said waters, all of said submerged lands north of the north dock line and lying and being between said north dock line and the main channel, if any there was or is, of the body of water designated St. Louis River in said waters, as alleged in paragraph eleven of the answer herein, and further denies
44 that, prior to recent years, there were no structures, improvements or personal property erected, constructed or located on said submerged land lying between said north dock line and said alleged channel of the body of water designated St. Louis River in said paragraph eleven of the answer herein, which might be subject to assessment for taxation or taxation by the State of Wisconsin or its taxing officers, other than said submerged land so assessed and taxed by the defendant and its taxing officers, and further denies that the first of said improvements, structures or docks was only erected in or about the year 1905, and the second of said improvements, structures or docks only erected in or about the year 1910; and further denies that the defendant, through its taxing officers, has, in the year 1913 and at all times since, asserted and exercised its power, authority and jurisdiction, both civil and criminal, and has assessed for taxation and taxed all said permanent improvements erected on said submerged land, together with the personal property thereon, lying and being situated north of said north dock line and between said north dock line and the alleged main channel of the body of water designated St. Louis River in paragraph eleven of the answer herein, and that it has assessed for taxation and taxed said improvements and personal property separately and to the owners thereof; and further denies that the defendant, through its taxing officials and otherwise, has at all times objected to the taxation thereof or the assumption of any jurisdiction thereover by the complainant, or any of its officers or agents, for the reason and upon the ground that said structures, docks, improvements and personal property, and said submerged land lying and being situated north of said north dock line
45 and between said dock line and the alleged main channel of the body of water designated St. Louis River in paragraph

eleven of the answer herein, were and are within the territorial jurisdiction of the State of Wisconsin.

8. Denies that the defendant, through its said officials, has, in fact, and lawfully, assessed, levied and collected taxes upon said property for many years last past and in the manner stated in the answer herein, or that it has at all times, asserted and exercised the rights of sovereignty both as to taxes and as to criminal and civil jurisdiction over said premises, or that it had lawful right and authority so to do under and by virtue of said enabling acts, or that the same were and are within the territorial jurisdiction of the defendant.

9. Denies that any double taxation, embarrassment or inconvenience to the parties referred to in paragraph thirteen of the answer herein, grows out of and is due to any unlawful acts of the complainant, its officers and agents, in creating a controversy and in setting up and asserting a claim of jurisdiction and assuming to exercise civil and criminal jurisdiction over, and to assess and collect taxes upon the land and improvements and property north of said north dock line referred to in paragraph thirteen of the answer herein; and denies that the same are within the territorial jurisdiction of the State of Wisconsin.

10. Denies that said conflict and said threatened great inconvenience are due and chargeable to the controversy made and claims asserted and set up by the complainant, or that the same are contributed in anywise to any of the acts of complainant and its servants
46 and agents; and denies that complainant, or any of its servants and agents, have committed any unlawful acts with reference thereto.

11. Denies that any of the actions referred to in paragraph fifteen of the answer herein affect the title to lands and improvements within the territorial jurisdiction of the State of Wisconsin; and denies that the court of complainant, the District Court for the Eleventh Judicial District of the State of Minnesota, has unlawfully and in violation of the sovereignty and jurisdiction of the defendant, assumed, asserted or attempted to exercise jurisdiction to try and determine, in any of said actions, the right and title in and to any land or property situated within the territorial jurisdiction of the State of Wisconsin.

12. Denies that the body of water known as St. Louis Bay comprises any part of St. Louis River, and denies that the boundary between the State of Wisconsin and the State of Minnesota is, by the enabling acts of Congress, and particularly the Act of March 6th, 1846, determined, described and fixed and, at all times since the approval of said acts and the admission of the State of Wisconsin into the Union, still is the thread or center of the main channel of the St. Louis River in said water, and that the main channel of the said St. Louis River in the waters thereof called St. Louis Bay at all times was and, save as the same has been obstructed or diverted by the construction of the docks referred to in said counterclaim or answer, and by the bridging of said River subsequent to the year 1899, still is varying and considerable distances north of the said north dock line as established by the War Department in 1899, and denies that the con-
47 troversy and dispute as to the jurisdiction, civil and criminal, and for purposes of taxation of the State of Wisconsin over the lands and property north of said dock line and lying and

being situate between said dock line and the boundary line, as claimed by the State of Wisconsin, is a controversy originated, provoked and created by the officers and agents of the complainant herein, without merit, lawful cause or equity in support thereof, and denies that any unlawful acts or unlawful claims have, at any time, been made by the officers or agents of the complainant or that complainant or its officers or agents at any time, have committed any act in violation of the rights or sovereignty and lawful authority of the defendant State of Wisconsin.

13. Alleges, as alleged in the complaint herein, that said St. Louis Bay is a part of Lake Superior and is not a part of St. Louis River and alleges that the boundary line of the State of Minnesota and the State of Wisconsin through upper and lower St. Louis Bay is, through the center of said Bay, in accordance with the enabling acts referred to in the bill of complaint herein.

14. Denies each and all manner of unlawful acts whatsoever whereof it is in any wise by the said answer or counterclaim charged.

Wherefore, complainant prays that, upon the final hearing of this cause, the boundary lines between the said States be ascertained, as prayed for in the complaint herein.

LYNDON A. SMITH,
Attorney General of the State of Minnesota.

OSCAR MITCHELL,
H. B. FRYBERGER,
Of Counsel.

48 UNITED STATES OF AMERICA:

STATE OF MINNESOTA,
County of Ramsey, ss:

Lyndon A. Smith, being duly sworn, deposes and says: that he is the duly elected, qualified and acting Attorney General of the State of Minnesota; that he has read the foregoing Reply and knows the contents thereof; that as such Attorney General he is authorized to pray leave to file the same, and that the same is true as he verily believes.

LYNDON A. SMITH.

Subscribed and sworn to before me this 10th day of March, 1917.

[NOTARIAL SEAL.] G. K. SPANGENBERG,
Notary Public, Ramsey County, Minnesota.

My commission expires March 11, 1922.

Office Supreme Court U. S. Filed Apr. 23, 1917. James D. Maher, Clerk.

And Afterwards, to wit, on the 24th day of May A. D. 1917, an appearance was entered for complainant as follows, viz:

49 *Order for Appearance.*

Supreme Court of the United States, October Term, 1916.

Original, No. 24.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

The Clerk will enter my appearance as Counsel for the Complainant.

(Name) CHARLES R. PIERCE,
(P. O. Address) 518 *Nat. Bank Bldg., Washington, D. C.*

☞NOTE.—Must be signed by a member of the Bar of the Supreme Court of the United States. Individual and not firm names must be signed.

Endorsed: Supreme Court U. S. October Term, 1916. Term No. 24, Original. Appearance for Complainant. Filed May 24, 1917.

50 And afterward, to wit, on the 4th day of June, A. D. 1917, a notice & motion for the appointment of a Commissioner to take testimony herein was filed in words & figures following, viz:

Supreme Court of the United States.

No. 24, Original Action.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

Notice of Motion.

To the State of Wisconsin:

You will please take notice that the complainant herein, the State of Minnesota, by its counsel will move the above court on Monday, June 4, 1917, for the appointment of a commissioner to take testimony, fixing the rate of his compensation and payment of his disbursements, and setting the time and circumstances under which the testimony in this case shall be taken.

LYNDON A. SMITH,
Attorney General of Minnesota.

51 Supreme Court of the United States.

No. 24, Original Action.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

Motion.

Now comes the complainant, the State of Minnesota, in the above-entitled cause, by its respective counsel and moves the court that an order issue for the appointment of a commissioner to take and report the testimony in the above-entitled cause, fixing the rate of his compensation and the payment of his disbursements, and setting the time and circumstances under which the testimony in such cause shall be taken, in accordance with and pursuant to the stipulation therefor, hereto attached.

LYNDON A. SMITH,
Attorney General of Minnesota.

Due and personal service of the above notice of motion and motion admitted.

WALTER C. OWEN,
Attorney General of Wisconsin.

52 Supreme Court of the United States, October Term, 1916.

No. 24, Original.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

Stipulation.

On Consideration of the motion of counsel for the complainant and the stipulation of counsel for the respective parties to this cause,

It Is Stipulated, that David E. Roberts, Esquire, of Superior, Wisconsin, be, and he is hereby appointed the Commissioner to take and return the testimony in this cause to this Court, without findings of fact or conclusions of law; that he shall be allowed not to exceed twenty dollars ($20) per diem for his compensation, together with his actual traveling and reasonable hotel expenses, an itemized statement of which shall be submitted to this court in his final report, the payment of such compensation and expenses to be made in such manner as the Court may hereafter direct.

It Is Further Stipulated, that the complainant may take testi-

53 mony in chief at such place as it may indicate between July 5, 1917, and August 1, 1917, upon giving ten days' notice of the time and place to the counsel for the defendant, and that the defendant may take testimony at such place as it may indicate between August 1, 1917, and August 25, 1917, upon giving ten days' notice of the time and place to the counsel for the complainant.

It Is Further Stipulated, that the complainant may take testimony in rebuttal between August 25th and September 15th, 1917, and that the defendant may take testimony in surrebuttal between September 15th and October 1, 1917, at such times and places as they may respectively indicate by ten days' notice to opposing counsel.

It Is Further Stipulated, that the above set forth times designated for taking testimony may be varied by consent of counsel, which shall have the same effect as an order entered by this court when entered upon the record before the Commissioner.

It Is Further Stipulated, that a competent stenographer shall be furnished by each party to the Commissioner who shall be under the direction and supervision of the Commissioner, and such stenographer shall furnish four copies of the testimony as soon as possible after the taking of each portion thereof, one for each of the parties and two for the Commissioner.

Subpœnas may be issued out of any United States District Court, effective throughout the United States.

Dated May 17, 1917.

LYNDON A. SMITH,
Attorney General of Minnesota.
WALTER C. OWEN,
Attorney General of Wisconsin.

Office Supreme Court U. S. Filed Jun- 4, 1917. James D. Maher, Clerk.

And on the same day, to wit, the 4th day of June, A. D. 1917, the following entry appears of record viz:

54 Supreme Court of the United States, October Term, 1916.

No. 24, Original.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

On motion of Mr. Charles R. Pierce, of counsel for the Complainant, and in pursuance of the stipulation of counsel for the respective parties to this cause.

It is now here ordered by the Court that David T. Roberts, Esquire, of Superior, Wisconsin, be, and he is hereby appointed the Commissioner to take and return the testimony in this cause to this Court, without findings of fact or conclusions of law; that he shall

be allowed not to exceed twenty dollars ($20.0-) per diam for his compensation, together with his actual traveling and reasonable hotel expenses, an itemized statement of which shall be submitted to this court in his final report, the payment of such compensation and expendes to be made in such manner as the Court may hereafter direct.

It is further ordered that the complainant may take testimony in chief at such place as it may indicate between July 5, 1917, and August 1, 1917, upon giving ten days' notice of the time and place to the counsel for the defendant, and that the defendant may take testimony at such place as it may indicate between August 1, 1917, and August 25, 1917, upon giving ten days' notice of the time and place to the counsel for the complainant.

It is further ordered that the complainant may take testimony in rebuttal between August 25th and September 15th, 1917, and that the defendant may take testimony in surrebuttal between September 15th and October 1, 1917, at such times and places as they
55 may respectively indicate by ten days' notice to opposing counsel.

It is further ordered that the above set forth times designated for taking testimony may be varied by consent of counsel, which shall have the same effect as an order entered by this court when entered upon the record before the Commissioner.

It is further ordered that a competent stenographer shall be furnished by each party to the Commissioner who shall be under the direction and supervision of the Commissioner, and such stenographer shall furnish four copies of the testimony as soon as possible after the taking of each portion thereof one for each of the parties and two for the Commissioner.

Subpœnas may be issued out of any United States District Court, effective throughout the United States.

June 4, 1917.

And afterwards, to-wit, on the 17th day of December, A. D. 1917, a motion for leave to open and print testimony, etc., was filed in words and figures following, viz:

56 To the Honorable Walter C. Owen, Attorney General for the State of Wisconsin:

You will please take notice that the Complainant herein, the State of Minnesota, by its Attorney General, will move the above court on Monday, December 17th, 1917, for a direction to the clerk of this court, to file and open the testimony returned to this court by the Honorable David E. Roberts, of Superior, Wisconsin, the Commissioner to take testimony herein, appointed by this court as of the 4th day of June, 1917, and further, that the said report of the said commissioner be printed according to the rules of this court and the stipulation of the Attorney General for the States, parties hereto.

LYNDON A. SMITH,
Attorney General for Minnesota.

57 Supreme Court of the United States.

No. 24, Original Action.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

Motion.

Now comes the Complainant, State of Minnesota, in the above entitled cause, by its Attorney General, and moves the Court, that an order issue:

First: For the filing and opening of the report of the testimony in the above entitled cause taken and returned by the Honorable David E. Roberts, Commissioner, under the appointment therefor made by this court herein on the 4th day of June, 1917.

Second: That the testimony so returned be printed in accordance with the rules of this court and the stipulation of the Attorneys General of the respective states, parties hereto, which stipulation is hereto attached and made a part hereof.

LYNDON A. SMITH,
Attorney General for Minnesota.

Due and personal service of annexed notice of motion and above motion admitted, and consent to the hearing of said motion on the 17th day of December, 1917, is hereby given.

WALTER C. OWEN,
Attorney General for Wisconsin.

58 Supreme Court of the United States.

No. 24, Original Action.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

Stipulation.

Whereas, there are some parts of the maps, charts, and diagrams introduced in evidence in this action and returned by the Commissioner appointed to take such evidence, to-wit: David E. Roberts, Esq., of Superior, Wisconsin, which it is unnecessary to print as a part of the record on account of duplications, the introduction of greater portions of such maps, charts and diagrams than are material and relevant to the hearing of this action, and the like;

Now therefore, it is stipulated, on the part of the Attorneys General of the States, parties hereto, that the following exhibits, constituting a part of the testimony in said action, need not be printed or otherwise reproduced in full, to-wit:

59 MINNESOTA EXHIBITS.

Not to be printed at all or reproduced:

Exhibits 2, 10, 24, 27 and 31.

The following described parts of the exhibits hereinafter mentioned are to be printed or otherwise reproduced, but not any other part of such exhibits, to-wit:

Exhibit "5": all above the blue line and showing the lake and waters involved.

Exhibit "6": all above the blue line showing the lake and waters involved.

Exhibit "9": that part to the east (or right) of the blue line showing the lake and waters involved.

Exhibit "11": that part east (to the right) of the blue line showing the lake and waters involved.

Exhibit "12": that part lying to the east (or right) of the blue line showing the waters involved.

Exhibit "18": omit all between the east and west blue line running, the one through the north line of Township 52, and the other the south line of Township 66, and reproduce all north of the south line of said Township 66 and south of the blue line running along the north line of Township 52.

Exhibit "26": reproduce that part above the blue line showing the lake and waters involved.

Exhibit "28": reproduce that part of the map to the left and above the blue line, which part shows the lake and the waters involved.

60 Exhibit "29": reproduce that part of the map lying within the blue line showing the lake and waters involved.

Exhibit "30": reproduce that part of the map lying to the east (or right) of the blue line showing the lake and waters involved.

Exhibit "50": reproduce all above (north of) the blue line.

Exhibit "57": reproduce that portion within the blue lines at the upper left-hand corner, showing the lake and waters involved.

Exhibit "58": reproduce all at the left of the blue line.

WISCONSIN EXHIBITS.

Not to be printed at all or reproduced:

Exhibits 4, 7, 8, 31, 31-*b*, 31-*k*, 31-L, 44, 46-*a*, and 46-*b*.

The following exhibits are to be printed or otherwise reproduced to the extent hereinafter specified and no more:

Exhibit "5": omit the certificate.
Exhibit "52": omit the certificate.
All documents, maps, charts and other instruments, not mentioned in the foregoing lists, are to be printed as they appear in the record, and their printing or reproduction is not to be affected in any way by this stipulation.

LYNDON A. SMITH,
Attorney General of the State of Minnesota, Solicitor for Plaintiff.
WALTER C. OWEN,
Attorney General of the State of Wisconsin, Solicitor for Defendant.

Office Supreme Court, U. S. Filed Dec. 17, 1917. James D. Maher, Clerk.

And on the same day, to-wit, on the 17th day of December, A. D. 1917, the following entry appears of record, viz:

61 No. 19, Original.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

On motion of Mr. C. E. Elmquist, in behalf of counsel leave is hereby granted to file the evidence in this cause, and to open and print the same.
December 17, 1917.

And afterwards, to-wit, on the 30th day of March, A. D. 1918, the Supplemental Report of the Commissioner herein, was filed in the words and figures following, viz:

62 In the Supreme Court of the United States, October Term, 1917.

No. 19, Original.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

To the Honorable the Supreme Court of the United States:

Pursuant to the commission issued to me in the above entitled action, dated the 4th of June, 1917, I do hereby certify and report

my per diam and expenses as commissioner to take the evidence in the above entitled action, upon the basis of $20. a day for time actually spent in and about the matter entrusted to me, amount- to Four hundred and Seventy Four dollars and Sixty cents ($474.60); and that the items thereof are fully shown in the bill of particulars hereto attached and made a part of this my supplemental report.

I respectfully ask leave to file this as my supplemental report, and that the same may be considered and acted upon by the court.

Respectfully submitted this 26th day of March 1918.

DAVID E. ROBERTS,
Commissioner.

63 SUPERIOR, WIS., January 17, 1918.

The United States of America to D. E. Roberts, Dr.

To the following legal services rendered as Commissioner taking the evidence in the case of the State of Minnesota against the State of Wisconsin, No. 19 October Term, 1917, under a commission issued out of the Supreme Court of the United States dated the 4th day of June 1917.

1917.	
July 17. To 1 day's time taking evidence at Duluth, Minn., street car fare and meals	$20.70
July 18. To same	20.70
July 19. To same	20.70
July 20. To same	20.70
July 21. To ½ day's time assorting and arranging exhibits offered in evidence by the State of Minnesota	10.00
August 7. To 1 day's time taking evidence at Superior, Wis.	20.00
August 8. To same	20.00
August 9. To same	20.00
August 10. To same	20.00
August 11. To same	20.00
August 14. To same	20.00
August 15. To same	20.00
August 16. To same	20.00
September 7. To 1 day's time assorting and arranging exhibits	20.00
September 17. To 1 day's time taking evidence in Superior	20.00
September 18. To *To* same	20.00
September 19. To same in Duluth, Minn	20.00
street car fare and meals	.70
September 19. To same in Duluth, Minn. plus street car fare and meals	*20.70*
September 20. To same in Duluth, Minn	20.70

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September 24. To ½ day's time spent in same at Superior	10.00
October 25. To 1 day's time spent in arranging exhibits	20.00

November 1. To 1 day's tome spent making index to the record	20.00
November 6. To one day's time spent making index to record	20.00
November 7. To one day's time spent making index to record	20.00
November 8. To ½ day's time spent verifying index and *and* noting on the exhibits	10.00
December 4th. To 1 day's time spent with the attorneys general of the two states arranging the exhibits for printing	20.00
November 28. To cost of telephoning Att'y Gen'l of the State of Minnesota at St. Paul	00.40
December 13. To ½ day's time spent overseeing the binding of the record and exhibits, packing and shipping the same to Clerk of Supreme Court, Washington, D. C.	10.00
	$474.60

STATE OF WISCONSIN,
Douglas County, ss:

D. E. Roberts being duly sworn says that he is the claimany above named; and that the above claim against the United States of America is just and true and the disbursements therein mentioned were actually made and no part thereof has been paid.

[SEAL.] D. E. ROBERTS.

Subscribed and sworn to before me this 18th day of January, 1918.

HENRY L. LLOYD,
Notary Public, Douglas Co., Wis.

My commission expires Sept. 26th, 1920.

65 Endorsed: Supreme Court U. S., October Term, 1917. Term No. 19, Original. State of Minnesota, Complainant, vs. State of Wisconsin. Supplemental report of Commissioner as to fees and expenses. Filed March 30, 1918.

And afterwards, to-wit, on the 20th day of April, A. D. 1918, an appearance was entered for complainant as follows, viz:

66 *Order for Appearance.*

Supreme Court of the United States.

No. 24, Original Action.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

The Clerk will enter my appearance as Counsel for and as Attorney General of the State of Minnesota.

(Name) CLIFFORD L. HILTON,
(P. O. Address) *State Capitol, St. Paul, Minn.*

☞NOTE.—Must be signed by a member of the Bar of the Supreme Court United States. Individual and not firm names must be signed.

Endorsed: Supreme Court U. S., October Term, 1917. Term No. 19, Orig. Appearance for Complainant. Filed April 20, 1918.

67 And afterwards, to wit, on the 15th day of May, A. D. 1918, an appearance was entered for the complainant as follows, viz:

68 *Order for Appearance.*

Supreme Court of the United States.

No. 19, Orig'l, October Term, 1917.

STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

The Clerk will enter my appearance as Counsel for the Complainant.

(Name) FRANK B. KELLOGG,
(P. O. Address) ——.

☞NOTE.—Must be signed by a member of the Bar of the Supreme Court United States. Individual and not firm names must be signed.

Endorsed: Supreme Court U. S., October Term, 1917. Term No. 19 Orig'l. Appearance for Complainant. Filed May 15, 1918.

69 And afterwards, to-wit, on the 22d day of May, A. D. 1918, a motion to dispense with the reproduction of maps, &c., was filed in words and figures following, viz:

Supreme Court of the United States. October Term, 1917.

No. 19, Original.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN.

Motion to Dispense with Reproduction of Maps, Etc.

To the Honorable the Chief Justice and Associate Justices of the Supreme Court of the United States:

Now comes the State of Minnesota, by its solicitors and counsel, and moves the court for an order dispensing with the reproduction or printing of the original maps, drawings, and diagrams returned by the commissioner as exhibits to the testimony in the above-entitled cause, and that the clerk of the Supreme Court be authorized to return said original maps, drawings, and diagrams to the commissioner who took the testimony, with instructions that the commissioner permit the attorneys for the respective parties, at their convenience, to duly inspect and examine said original maps, drawings, and diagrams to aid them in the preparation of briefs
70 for the final hearing, and that when counsel have completed the inspection and examination said commissioner be directed to return said original maps, drawings, and diagrams to the clerk of this court.

Said motion will be brought for hearing before the Supreme Court of the United States, at Washington, D. C., on June 3, 1918, at the opening of the court, at twelve o'clock, on said day, or as soon thereafter as counsel can be heard.

The grounds for such motion are as follows, to wit: That said cause involves the boundary line between the State of Minnesota and the State of Wisconsin in the Duluth and Superior districts, at the head of Lake Superior; that in the taking of testimony in said cause the respective parties introduced in evidence before the commissioner a large number of original maps, drawings, and diagrams illustrating the testimony and cause, which were bound by the commissioner in atlas form and which, it appears from inspection, will be very difficult to reproduce, some of them consisting of old maps now entirely out of print and of which copies cannot be obtained except by reproduction; that it is estimated by the clerk of the Supreme Court to reproduce these original maps, drawings, and diagrams will cost about $12,000; that the State of Minnesota has no appropriation from which said cost of reproduction can be paid and the State leg-

islature does not meet until the winter of 1919. A similar motion was made in the case of the State of Louisiana vs. The State of Mississippi, at a prior term of this court, and a similar order to that which is prayed for in this case was entered.

Witnesseth this 15th day of May, 1918.

CLIFFORD L. HILTON,
Attorney General of Minnesota.

FRANK B. KELLOGG,
Of Counsel for Complainant.

71 To the Honorable Spencer Haven, Attorney General of Wisconsin:

Please take notice that the foregoing motion will be submitted to the Supreme Court of the United States on Monday, June 3, 1918, at twelve o'clock noon, or as soon thereafter as counsel can be heard.

CLIFFORD L. HILTON,
Attorney General of Minnesota.

FRANK B. KELLOGG,
Of Counsel for Complainant.

Office Supreme Court, U. S. Filed May 22, 1918. James D. Maher, Clerk.

And afterwards, to-wit, on the 25th day of May, A. D. 1918 an appearance was entered for complainant, as follows, viz:

72 *Order for Appearance.*

Supreme Court of the United States, October Term, 1917.

No. 19, Original.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN.

The Clerk will enter my appearance as Counsel for the Complainant.

(Name) H. B. FRYBERGER,
(P. O. Address) *Duluth, Minn.*

☞NOTE.—Must be signed by a member of the Bar of the Supreme Court United States. Individual and not firm names must be signed.

Endorsed: Supreme Court U. S., October Term, 1917. Term No. 19 Orig'l. Appearance for Complainant. Filed May 25, 1918.

73 And afterwards, to-wit, on the 3d day of June, A. D. 1918 the following entry appears of record, viz:

No. 19, Original.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

On motion of Mr. Frank B. Kellogg, of counsel for the com plainant,

It is now here ordered by the Court that leave be, and the same i hereby, granted to dispense with the reproduction or printing o the original maps, drawings and diagrams returned by the Commis sioner as exhibits to the testimony in the above entitled cause, and that the Clerk of this Court be, and he is hereby, authorized to return said original maps, drawings and diagrams to the Commissioner who took the testimony with instructions to permit the counsel for the respective parties at their convenience to duly inspect and examine said original maps, drawings and diagrams to aid them in the prep aration of the briefs for the final hearing, and when counsel have completed the inspection and examination said Commissioner is hereby directed to return said original maps, drawings and diagrams to the Clerk of this Court.

June 3, 1918.

a Supreme Court of the United States.

No. 24, October Term, 1916.

No. 19, October Term, 1917.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

To the Honorable the Supreme Court of the United States:

The undersigned commissioner appointed by an order entered in this cause on the 4th day of June, 1917, to take and return such evidence as the parties should produce, respectfully return to the Court that, pursuant to the said order he on the 17th day of July, 1917, opened the commission conferred on him, and counsel for the respective parties being present, proceeded to execute the said commission on that day *that day* and on various other days, in a court room in the Court House in the City of Duluth, Minnesota, and in the Federal Court Room in the Federal Building at Superior Wisconsin,

until the 24th day of September, 1917, on which last named day the parties not offering any more testimony the taking of the evidence was closed.

The commission was executed by receiving the testimony of the several witnesses named in the testimony who were all duly sworn before giving their evidence and the testimony so given by them was taken down by competent stenographers in the presence of the commissioner and the same is herewith submitted (in duplicate) in three bound volumes attested by me signature with the exhibits offered and therein mentioned bound in three volumes, two of which are marked Wisconsin Exhibits and One Minnesota Exhibits, all attested by my signature.

b And the testimony and exhibits are herewith sent to and deposited with the clerk of this honorable Court.

Dated at Superior, Wisconsin, this 13th day of December, 1917.

DAVID E. ROBERTS,
Commissioner.

c Rec'd July 18, 1917. D. E. Roberts, Com'r.

Supreme Court of the United States.

No. 24, Original, October Term, 1916.

THE STATE OF MINNESOTA, Complainant.

vs.

THE STATE OF WISCONSIN, Defendant.

Office Supreme Court, U. S. Filed Jan. 28, 1918. James Maher, Clerk.

Record of Testimony and Proceedings.

First Day, July 17, 1917.

1 Rec'd July 18, 1917. D. E. Roberts, Commissioner.

Supreme Court of the United States.

No. 24, Original, October Term, 1916.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

Record of Proceedings Had and Testimony Introduced in the Above Entitled Action Before the Honorable David E. Roberts, Commissioner Appointed to Take the Evidence, at the St. Louis County Court House, in the City of Duluth, Minnesota, on the 17th day of July, 1917.

Present, the Commissioner and others.

Appearing on behalf of the complainant:

The Honorable Lyndon A. Smith, the Attorney General of the State of Minnesota, Messrs. H. B. Fryberger and W. D. Bailey, of Duluth, Minnesota, and Mr. Louis Hanitch, of Superior, Wisconsin.

Appearing on behalf of the defendant:

The Honorable Walter C. Owen, the Attorney General of the State of Wisconsin, Mr. H. V. Gard, Corporation Counsel of Superior, Wisconsin, Mr. T. T. Hudson, of Duluth, Minnesota, and Mr. [illegible] man T. Powell, of Superior, Wisconsin.

The Commissioner: If you are ready, you may proceed, gentlemen.

2 Attorney-General Smith: If the original order is here, it would be proper to file the same at this time.

The Commissioner: I have the original order.

Attorney-General Smith: It should be noted that it is present.

The Commissioner: I will file the order at this time. It reads as follows:

Supreme Court of the United States.

No. 24, Original, October Term, 1916.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN.

On motion of Mr. Charles R. Pierce, of counsel for the complainant, and in pursuance of the stipulation of counsel for the respective parties to this cause,

It is now here ordered by the Court that David E. Roberts, Esquire, of Superior, Wisconsin, be, and he is hereby, appointed the Commissioner to take and return the testimony in this cause to this Court, without findings of fact or conclusions of law; that he shall be allowed not to exceed twenty dollars ($20.00) per diem for his compensation, together with his actual traveling and reasonable hotel expenses, and itemized statement of which shall be submitted to this court in his final report, the payment of such compensation and expenses to be made in such manner as the Court may hereafter direct.

It is further ordered that the complainant may take testi-

3 mony in chief at such place as it may indicate between July 5, 1917, and August 1, 1917, upon giving ten days' notice of the time and place to the counsel for the defendant, and that the defendant may take testimony at such plase as it may indicate between August 1, 1917, and August 25, 1917, upon giving ten days' notice of the time and place to the counsel for the complainant.

It is further ordered that the complainant may take testimony in rebuttal between August 25th and September 15th, 1917, and that the defendant may take testimony in surrebuttal between September 15th and October 1, 1917, at such times and places as they may respectively indicate by ten days' notice to opposing counsel.

It is further ordered that the above set forth times designated for taking testimony may be varied by consent of counsel, which shall have the same effect as an order entered by this court when entered upon the record before the Commissioner.

It is further ordered that a competent stenographer shall be furnished by each party to the Commissioner, who shall be under the direction and supervision of the Commissioner, and such stenographer shall furnish four copies of the testimony as soon as possible after

the taking of each portion thereof, one for each of the parties and two for the Commissioner.

Subpœnas may be issued out of any United States District Court, effective throughout the United States.

June 4, 1917.

A true copy,
Test:

[Seal of the Supreme Court of the United States.]

JAMES D. MAHER,
Clerk of the Supreme Court of the United States.

4 The Commissioner: Nothing was said to me as to whether an oath should be taken by the Commissioner, but as a matter of fact I have made an oath, in duplicate, and will file the same. It reads as follows:

In the Supreme Court of the United States.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

STATE OF WISCONSIN,
Douglas County, ss:

I, the undersigned, having been appointed by the Court the Commissioner to take the evidence in the above entitled action, do solemnly swear that I will support the Constitution of the United States, and that I will to the best of my ability perform the duties of Commissioner to take the evidence in this action, so help me God.

DAVID E. ROBERTS.

Subscribed and sworn to before me this 16th day of July, 1917.

HENRY L. LLOYD,
[NOTARIAL SEAL.] *Notary Public.*

My Commission expires Sept. 26th, 1920. Douglas Co., Wis.

The Commissioner: Are there any stipulations that you would like to enter upon the record at this time? I suppose an oath should be subscribed by the reporters.

5 Attorney-General Smith: I will make this statement for the record: The State of Minnesota furnishes to the Commissioner as its stenographer required by the order of the court herein to be furnished, Mr. Robert S. Taylor of Duluth, Minnesota, and the State of Wisconsin furnishes as its stenographer Mr. James R. Hyle, of Superior, Wisconsin.

It was agreed by counsel for the respective parties that each of the stenographers would take in shorthand and reduce to typewriting one-half of each day's proceedings and that the record would be prepared daily and submitted to the Commissioner for examination and the corrections of such errors, if any, as might occur.

The stenographers took and subecribed an oath, as follows:

In Supreme Court of the United States.

THE STATE OF MINNESOTA, Complainant,

vs.

THE STATE OF WISCONSIN, Defendant.

STATE OF MINNESOTA,
St. Louis County, ss:

We James R. Hile, official reporter of the Eleventh Judicial District of Wisconsin, and Robert S. Taylor, official reporter of the Eleventh Judicial District of Minnesota, employed as official stenographers in the above entitled action to take the evidence
6 under David E. Roberts, the Commissioner appointed to take the evidence, do, each of us, solemnly swear that we will support the Constitution of the United States and that we will well and truly perform the duties of stenographer or reporter in this cause to the best of our several abilities, so help us God.

JAMES R. HILE,
ROB'T S. TAYLOR.

Subscribed and sworn to before me this 17 day of July, 1917.

D. E. ROBERTS,
Commissioner.

The Commissioner: I take it that this rule will prevail: That objections to evidence will be noted briefly, without argument; in other words, the equity rule will prevail, the same as it would in the taking of depositions.

Attorney-General Smith: Yes, I think so, except as to materiality.

Mr. Fryberger: The Commissioner cannot rule on anything.

The Commissioner: I cannot rule on anything. All I can do is to take any evidence that may be offered.

Mr. Fryberger: In the logical order of things the State of Minnesota would call an official from the United States Engineer's office to identify a number of maps; but they have requested us to defer so doing until tomorrow morning, as they are making up their
7 monthly report and cannot get away from the office. So, on behalf of the State of Minnesota, I would like to call at this time Mr. John G. Howard. I want the record to show this is a little out of order, but it seems necessary owing to the condition of affairs in the Engineer's office.

8 JOHN G. HOWARD, was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Your name is John G. Howard?
A. Yes, sir.
Q. Where do you reside, Mr. Howard?
A. Duluth, Minnesota.

The Commissioner: Give your postoffice address. We might want to reach you again.
Witness: 1431 East Superior Street, Duluth, Minnesota.

Q. You are a married man?
A. Yes, sir.
Q. You have lived here how long at the head of the lake?
A. Fifty-nine years.
Q. What is your age?
A. I will be sixty-one in November next.
Q. What was your father's name?
A. John D. Howard.
Q. And he has been dead a good many years?
A. Yes, sir; about twenty-odd years.
Q. What is your business, Mr. Howard?
A. My business now is lands; I used to follow the water, sail.
Q. You have been engaged in the mineral land business, largely in Cook County, for many years last past; have you not?
A. Yes, sir; I have.
Q. And have purchased many thousands of acres of land there for yourself and others?
A. Yes, sir.
Q. And you are still in that business?
A. I am.
Q. How long have you been engaged in the iron-land business?
A. About twenty years.

9 Q. You have also been connected for several years last past with the Yawkey Iron interests?
A. Yes, sir.
Q. Briefly, without going into details, state in what way, if you will. I do not care to inquire into any of your private affairs at all.
A. Well, I purchased about 70,000 acres of land for them on the different ranges here, and looked over different ranges in Wisconsin and Minnesota, with a view of purchasing, and have purchased some in other places.
Q. The Yawkeys are interested in corporations that are operating large iron mines in this state?
A. Yes, sir.

Q. And were originally large timber operators?
A. Yes, sir.
Q. Now, what was your father engaged in, prior to his death, while you were a boy?
A. He had a store in Superior in the early days, a mill and lumber.
Q. In Superior, Wisconsin?
A. In Superior, Wisconsin.
Q. Can you tell about what time he started there?
A. Oh, I think it was in '55.
Q. 1855?
A. 1855; yes, sir.
Q. That he came to Superior?
A. He came to Superior.
Q. And about how long did he continue in business in Superior, Wisconsin?
A. I don't know; a great many years; I am not able to say just how many.
Q. It was before your time, anyway, that he came there?
A. How?
Q. Do you remember when he came to Superior?
A. No, I do not. I was just a baby, in Vermont, and he came before my mother and I came.
Q. He came from Vermont?
A. Yes.
Q. Now, when did your father come to Duluth, about when?
A. I don't know just exactly; probably 1870.
Q. And did he live in Duluth, Minnesota, continuously, from the time he came here until his death?
A. Yes, sir.
Q. What was his business after he came to Duluth?
A. Why, he did not do very much business. He had quite large tracts of land situated around the bays here and down the lake—pine, and he disposed of that; sold the land and——
Q. Well, he was a very large real-estate operator at the time of his death, was he not?
A. He was.
Q. And had been for many years prior to that time?
A. Yes.
Q. Was he ever in the timber business?
A. Yes, sir.
Q. For about how long? State in a general way what he did while you were a boy, with reference to the getting out of logs and timber around the bay involved in this action.
A. He had a sawmill where the shipyard is now.
Q. In Superior, Wisconsin?
A. In Superior, Wisconsin.
Q. That is on Connor's Point?
A. That is on Connor's Point, on the point side. They used to call that Howard's pocket—I guess they do yet.
Q. Yes, that little bay in there is called Howard's pocket.

A. Had that full of logs from the time I can remember, for years.

Q. Where is Howard's pocket with reference to what was originally known as the town of West Superior and the bay of Superior? I would like to have that described on the record, if you will.

11 A. Connor's Point runs right along parallel with Superior Bay, and Howard's pocket is right on the west side of it.

Q. That is, Connor's Point separates Superior bay from Howard's pocket?

A. Yes.

Q. For how long a time did your father operate that mill, in a general way?

A. I could not say. I should say ten, twelve or fifteen years.

Q. Where did he get his logs for that mill?

A. Around where West Superior now stands, and above there.

Q. On the bay of St. Louis?

A. On the bay of St. Louis, in Wisconsin.

Q. Upper and lower St. Louis bay?

A. Well, both; upper and lower both.

Q. Did he cut any logs in Minnesota, or was it all in Wisconsin?

A. I do not think he ever cut any in Minnesota; I think they were all cut in Wisconsin.

Q. Did you have a brother that was also associated with him or that worked for your father, the same as yourself, in this timber business?

A. Yes, sir.

Q. What was his name?

A. Benjamin F. Howard.

Q. He is now a resident of Saskatchawan?

A. Yes, sir.

Q. And he is in the court room at the present time?

A. He is.

Q. What is your earliest recollection of navigating this bay of St. Louis, the upper and lower bay, as well as the bay of Superior, Mr. Howard, as nearly as you can recollect?

A. Well, I should think 1870.

12 Q. 1870?

A. Yes, sir.

Q. What did you do at that time with reference to the matter of navigating this bay either for yourself or for others?

A. Well, we used to pole these logs down, to get them up to the bay there, and my brother and I used to have to go on the raft there and help pole those logs down, which was a long job, sometimes took us weeks when the wind was not very favorable, very muddy bottom, and could not get along very well.

Q. You and your brother Ben?

A. Yes, with other men.

Q. It was done in rather a primitive method at that time?

A. Yes, sir. Sometimes when the wind was around we used to have to hitch on to the shore and stay there all day and maybe work all night.

Q. For how many years, in a general way, did you and your brother operate in this way on this bay?

A. Quite a good many years; I couldn't say; ten or twelve.

Q. Probably ten or twelve years, working for your father, as boys?

A. Yes.

Q. And how much older was your brother Benjamin than yourself?

A. Four years.

Q. Did he have charge of the boat a good share of the time when you were operating, hauling logs?

A. Well, he had charge of a steamboat we had on there a little later than that.

Q. A little later than that?

A. Yes.

Q. How long did you work with the steamboat on this bay or the bays?

A. Why, we used to take lumber from this mill and go down to Silver Island, Canada, with it, and then when we come back
13 we would spend a few days towing logs down to the mill.

Q. For how many summers did you do this?

A. I say three or four, probably.

Q. Now I wish you would explain that a little more fully. For ten or twelve years, as I understand it, you poled your logs down?

A. Yes, sir.

Q. The St. Louis Bay down to the mill and Howard's pocket?

A. Yes, sir.

Q. You and your brother Ben, with other men, did this work?

A. Yes, sir.

Q. Then, later, your father purchased a steamboat?

A. Yes, sir.

Q. What was the name of that boat?

A. The Lottie Bernard.

Q. How much water did that boat draw?

A. I should say she drew seven or eight feet.

Q. How large was it? Describe the boat. Was it a stern screw, or a side-wheeler?

A. A side-wheel boat; I should say 150 feet long.

Q. How much tonnage would she carry?

A. As I recollect, she would carry about 100,000 feet of lumber, or 150,000, or maybe more.

Q. Now, when you sawed this lumber, where was your market for this lumber? Tell in a general way, and briefly.

A. The only market we had for that, we used to raft it down to Superior, down the bay; used to build a raft there. We furnished the lumber for the Superior court house, and that job got quite a little; was built with one board right on top of the other, and we used to put it in the water and pole it down to the bay and
14 pull it out and haul it up to the court house.

Q. That old court house that is there now?

A. Yes.

Q. You built that?

A. Yes.

Q. What about this Silver Island? what was your business there?

A. I guess we furnished all the lumber for Silver Island, for building the piers around it; a small island; they cribbed it all around, and I know we made the trip as often as we could to Silver Island, right along.

Q. For several years?

A. Yes, sir.

Q. How far is that island from the Minnesota boundary line?

A. I should say forty or fifty miles.

Q. And it is a Canadian possession?

A. Yes, sir.

Q. And about how far from the Canadian shore?

A. Well, it is about seven or eight miles, I guess, from Thunder Cape.

Q. What was going on there at that island at that time?

A. They were mining silver there, and the island was very small, and they had to build cribs all around it, to protect it, so as to operate it.

Q. For several years after you got this steamboat—this was a steamboat, as I understand it, this Lottie Bernard?

A. Yes.

Q. You and your brother operated it on this bay?

A. We operated it on the lake and bay both.

Q. The lake and all these bays?

A. Yes, sir.

Q. Could you tell about what years it was you operated this boat on these bays in the lake?

A. I could not say; no, sir.

Q. But you know it was a number of years?

A. I do.

Q. Was it long prior to the time there was any dredging done?

15 A. Oh, yes, there had been no dredging ever done there at all, as far as that is concerned.

Q. None done there at all at that time?

A. No place here.

Q. Were you familiar with the St. Louis Bay, upper and lower, from Superior Bay—that would be Rice's Point—to the Indian village of Fond du Lac, during all that time?

A. Well, not up quite as far as Fond du Lac. We did not go that far. We went up to Big Island, around there.

Q. Big Island.

A. In the early days. I was familiar with it afterwards.

Q. I am talking about your early experience.

A. We went up as far as Big Island; that is about as far as we went.

A map produced by counsel for the State of Minnesota was marked Minnesota Exhibit 1.

Mr. Fryberger: I call counsel's attention to Minnesota Exhibit 1,

and I will ask you, gentlemen, if you will admit that that is an official map of the army engineers of the United States government, at Duluth, Minnesota? I will state now that the lines in red were placed on there, as I understand it, by Mr. Howard himself.

Mr. Bailey: Yes.

Mr. Fryberger: And he will explain those in the course of his testimony. That is a map that was gotten from the United States' Engineer's office of Duluth.

Mr. Bailey: The lettering also of those red lines.

Mr. Fryberger: The lettering on the red lines was placed on there by Mr. Howard. It is the General George G. Meade map of 1861.

16 The Commissioner: Possibly you gentlemen can stipulate that is the Meade map.

Attorney General Owen: We admit the map except as to the red lines.

The Commissioner: It is stipulated that Minnesota Exhibit 1 is the so-called Meade map excepting the red lines, and so forth.

Attorney-General Owen: We admit just what counsel asked us to admit.

Mr. Fryberger: Yes, that is what we want; except the red lines.

Q. I show the witness Minnesota Exhibit 1, and will ask you, Mr. Howard, if you recognize that as a map of the head of the lake, showing the westerly end of Lake Superior, the bay of Superior, St. Louis Bay, and the vicinity surrounding?

A. Yes, sir, it is.

Q. I call your attention to the lines marked in red on this map, from A to C, from B to D, and F to E, and will ask you if you placed those red lines on that map?

A. I did, sir.

Q. When?

A. Yesterday.

Q. At whose request?

A. Why, Mr. Bailey's, I think.

Q. Mr. W. D. Bailey?

A. Yes, sir.

Q. One of the counsel for the State of Minnesota?

A. Yes.

Q. Now I want you to explain, in your own words, just exactly what those lines indicate.

A. They indicate the channels that were navigated from the time I first operated on those waters until the time it was dredged.

17 Q. Until the time it was dredged. Do you recollect about what time it was dredged?

A. No, sir, I do not.

Q. You had quit operating there at the time?

A. I had. I never operated there much. Oh, I have operated there some since it was dredged, but I could not say what year it was.

Q. But you are testifying now prior to the time there had been any dredging?

A. Prior to the time there had been any dredging done; yes, sir.

Q. Go ahead and explain what the line E to F and D, for instance, indicates; from E to F, and then from F to D.

A. That used to be the channel that we worked the boat in to tow the logs down from Little Pokegama here, up in this vicinity, in the early days. (Indicating)

Q. Little Pokegama is marked on the map there?

A. Yes.

Q. That is a bay—Little Pokegama?

A. Yes. We logged in through this country.

Q. You mean the country surrounding Little Pokegama?

A. Yes; and right in here; and we used to work up here with the steamboat. (Indicating)

The Commissioner: Say worked up from A to B; so it will be intelligible on the record.

Q. A. to F indicates what?

A. Where we used to tow the logs through in the early days, from A to F, passing the point E.

Q. From A to F. Then the red line from F to D indicates what?

A. Indicates the channel going up the river.

Q. Now what does the red line from A to B indicate, and
18 from B to C?

A. That was a channel running up the river also; went around the other side of the island, Big Island.

Q. Big Island?

A. Yes, sir.

Q. That is now called Whiteside also?

A. Yes, sir.

Q. Also called Clough Island?

A. Yes, sir.

Q. And sometimes the Island?

A. Yes.

Q. And sometimes Big Island?

A. Yes.

Q. Now what does the line running from B to F and on to D indicate?

A. That is the junction of the two channels; that one running up around the south channel.

Q. Now, are you familiar, or were you familiar, with the channels that were mostly used by people navigating St. Louis Bay in those early days, when you first started?

A. Yes, sir.

Q. Which was the channel that was used the most during all that time?

A. Shall I use the letters?

Q. Yes.

A. From A to B and to D, and from there on the south side of the island, the Big Island.

Q. Extending on up—where?

A. Extending up through here.

Q. When you say "through here" you mean through the channel which shows the soundings on this map, Minnesota Exhibit 1?

A. Yes, sir.

Q. Up to the southerly part or the southerly end of what is the Island on this map?

A. Yes, sir.

Q. That is the channel that was mostly used, you say?

A. It was always preferable; yes, sir.

Q. Was there any other channel used from the point C
19 marked on this map, up the river?

A. Yes, sir.

Q. Or up the bay.

A. Yes, sir.

Q. What?

A. Went right on the same channel.

Q. The channel that is shown on this map by the soundings?

A. Shown on this map by the soundings, yes.

Q. Going northerly of the island as shown on this map?

A. Yes, sir.

Q. And would reach the south channel at what point?

A. At the same point; that would be the southeast point of the Big Island.

Q. The southeast point of the Big Island. Now what was the depth of water in these different channels that you have mentioned here, in a general way, and why was the southerly channel used the most and the most preferable to the mariners and navigators or shippers at that time?

A. It was shorter and just as deep water.

Q. Just as deep water?

A. Yes, sir.

Q. Now I want to call your attention, Mr. Howard, to a deep hole to the northerly of the red line running from A to B, and then from B to C, and will ask you whether or not that was ever used by you or by people running boats generally at that time?

A. I never saw it used, no, sir; never knew a boat to go around there.

Q. What was the condition of that hole at the point just northerly of the point marked C, that is, as to shallowness and there being a bar?

A. Why, there was always a bar across there; it was impossible to get through from the channel down here, to get through into that hole.

20 Q. And then, as I understand your testimony, the sum and substance of it is that that hole to the northerly, shown by these soundings on the map Minnesota Exhibit 1, to the northerly of the line running from A to B and B to C was not used for boats at all?

A. No, sir.

Q. Could you use it for a small boat or row boat?

A. Boats could go in there; I guess they towed logs out of there, and one thing or another, but they went in from this way.

Q. That hole is more particularly described on this map, Minnesota Exhibit 1, as a sort of a half circle, starting from the line A to B and running around to the point C marked on the map.

Attorney-General Owen: Why don't you letter that, put in another letter there?

(The point indicated was marked by the witness with the letter G in red ink.)

The Commissioner: Is that what you mean, the point marked by the letter G?

Witness: Yes.

Mr. Fryberger: Yes, that is what I mean.

Q. Mr. Howard, does the hole run entirely up to the point marked C?

A. No, sir.

Q. But runs in that direction?

A. Yes, sir.

Q. Now what is the fact with reference to the channels and currents in this bay changing a great deal from time to time?

A. Why, there are currents out of all of these inlets or little inlets in there, that run out and make deep places.

21 Q. What is the nature of the bay, the bottom of the bay of St. Louis, both upper and lower?

A. Why, very soft and muddy.

Q. State more specifically, if you can, about the shifting of the bottom and the scouring of the different channels.

A. My opinion is—and I sounded more or less up there at the time we were running excursion boats up—that the channel shifted considerably there in different places; I found it so.

Q. Numerous channels or holes all through the bay?

A. Yes, sir.

Q. What about the current in this bay? If there ever was current, when did it occur?

A. At the time we had freshets in the spring of the year, current running both ways, and sometimes up; sometimes when we had a northeaster, sometimes the current running up, and sometimes down.

Q. How far did this dead water, so to speak, continue up this bay towards Fond du Lac?

A. Well, up to the Big Island.

Q. Up to the Big Island?

A. Yes, sir.

Q. What is the difference in the color of this water in the St. Louis Bay and in the lake, in the summer time, if there is any?

A. Different than in Lake Superior?

Q. Yes.

A. Oh, there isn't very much difference, only this upper water is very dark.

Q. And the lake water is blue?

A. Yes.

Q. How far would this blue water come up at different times?

A. I never saw it up there.
Q. How far would it come up?
A. I have only seen it in the bay up here. (Indicating)
Q. But it would be more or less colored in St. Louis Bay,
23 upper and lower, at all times?
A. Yes, at all times.
Q. Will you describe what you mean by the Upper bay and the Lower bay?
A. Grassy Point divides the two bays. East of Grassy Point is Lower St. Louis Bay and to the west of it would be Upper St. Louis Bay.
Q. What is the character of the shores of this bay? I call your attention with special reference to whether or not the shores have the characteristics of a river or of a lake, with reference to being lines that usually follow a river or where a river usually flows.
A. A bay, I should call it; they always called it a bay, and I cannot see that it should be called a river.
Q. Was it commonly and always known as a bay?
A. Yes, sir.

Attorney-General Owen: I do not think you should ask such leading questions right along, Mr. Fryberger, as you have been asking.
Mr. Fryberger: I will try not to transgress very much.

Q. Now state whether or not this map shows correctly the indentations along this bay.
A. I think it does; yes, sir.
Q. And what is the fact about there being a great many, especially on the Wisconsin shore?
A. There a quite a number of them on both shores; more on the Wisconsin shore.
Q. And state what you have to say with reference to these indentations, that is, as forming part of your opinion as to whether these shores have the characteristics of river shores, or banks, or lake shores.
A. The characteristics are of a lake or bay, wholly.
Q. Now, you spoke about operating on this bay at a later
23 time when you ran a different kind of a boat, as I understand it.
A. Yes, sir.
Q. When was that, Mr. Howard?
A. Well, I think that was in 1886 to 1890.
Q. Was anyone associated with you in that business?
A. Captain Flynn.
Q. Captain Flynn. Is he here in the court room at the present time?
A. Yes, sir.
Q. What kind of a boat was that?
A. That was a side-wheel boat.
Q. Was that prior to the time this dredging had taken place by the government?
A. Yes, it was.

Q. How large was that boat?
A. Well, I don't know. She is over 100 feet long anyway.
Q. And what did you use it for?
A. Excursion business.
Q. And running from where to where?
A. Oh, running from Duluth here to Fond du Lac—well, we never got quite to Fond du Lac; that turn in the river where the sawdust had got in, we never made that. We ran just this side of Fond du Lac, a little ways. We had a landing there and put the people off.
Q. Did you haul anything but passengers?
A. That is all.
Q. That is all?
A. Yes.
Q. How much water did the boat draw?
A. Oh, I should say she drew six or seven feet.
Q. What channels did you use in navigating that boat?
A. Why, we used the channel from A to C.
24 Q. A to C?
A. Yes, sir; and then on up.
Q. That is, took the channel to the northerly of the island as shown on this map?
A. To the northerly of the island.
Q. Did you ever go around the other way?
A. Yes, sir.
Q. In what way?
A. Went around from A to B and then to D.
Q. B to D?
A. And on up.
Q. I will ask you whether or not in going up from Grassy Point you took what is known as the South Channel, going to the south of the island, as shown on this map, and the channel on the north of the island; always took the channel marked on this map as A to B?
A. Yes, sir.
Q. I will ask you whether or not that was the practice of all the boats——
A. It was the practice of all the boats.
Q. —drawing heavy draft.

Mr. Fryberger: I would like to state to the gentlemen present that I am producing a map which is about worn out. I have had a photograph of it taken and I suppose the photograph will be ready by this afternoon. I would like to use this map to a certain extent before we get the photograph. Mr. Howard desires to keep this map. It is an old one of his father's, one of the original Bardon maps. Will there be any objection to my doing that? I will have it marked, if you wish, but I would like to have it understood that we will withdraw it and use the photograph when it gets here.

The Commissioner: Will you identify it in some way?
25 Mr. Fryberger: We will have it marked Exhibit 2, with the understanding that we are to withdraw it and use a photograph.

The Commissioner: Yes.

Mr. Hudson: I suppose the map itself will be subject to the objection of immateriality when it is offered. The witness is going to testify from memory now, I understand.

(The Bardon map, produced by Mr. Fryberger, was marked Minnesota Exhibit 2.)

Q. I show you Minnesota Exhibit 2, and will ask you what that map is.

A. That is the map that my father used to have. Since his death I have had it.

Q. In your office?

A. In my office.

Q. Do you know the date that was on that map originally, before it was worn off?

A. I do not, sir.

Q. But it is a very old map, is it not?

A. It seems to be. I know it is an old map.

The Commissioner: Is it more than thirty years old?

Witness: I should say it is around there somewhere. My father died in 1892.

Mr. Fryberger: Yes; it must be more than forty.

Witness: My father has been dead twenty-five or twenty-six years. I should say the map is over thirty years old.

Q. Did he use that map himself before his death?

A. Yes, sir.

Q. Did you boys use that map any at the time you were——

A. Oh, no.

Q. You used the boat and the water, eh? Now what is
26 that map known as? What is the name of it?

A. The head of Lake Superior.

Q. Yes, I know, but published by whom?

A. Published by James Bardon.

Q. Was that a map that had wide circulation at that time, used a great deal here at the head of the lakes?

A. Oh, I could not say, Mr. Fryberger, about that.

Q. Who was James Bardon?

A. He lived in Superior. I think he published a paper at that time.

Q. Well, he was the man that published that map?

A. He was the man that published this map, I suppose.

Q. Now, I call your attention to that line starting out in Lake Superior as shown by Minnesota Exhibit 2, marked the "state boundary," this dotted line between Minnesota and Wisconsin, running through the channel, the old channel, between the bay of Superior and the lake, and then running up practically the center of the bay of Superior, through between Rice's Point and Connor's Point, then through practically the center of St. Louis Bay, and on up I guess nearly to Fond du Lac. I will ask you if that line was on there at the time you first saw that map?

A. Yes, sir.

Q. What was the common understanding at that time, Mr. Howard, about that being the state line between the State of Minnesota and the State of Wisconsin?

Attorney-General Owen: I object to that as incompetent, irrelevant, immaterial, and on the further ground that the wit-
27 ness is not competent to testify.

The Commissioner: Go ahead and answer.

Q. You may answer.

A. That was considered by everybody to be the boundary line between the two states.

Mr. Fryberger: I have several more maps that are being photographed, and I believe I will wait for those photographs. I will probably get them this afternoon. I would rather do that.

Mr. Bailey: You have not offered this yet.

Mr. Fryberger: I will not offer this until I get the photograph.

Q. I will ask you one more question. How far below Fond du Lac did that dead water start, that is, where the bay commenced and the river left off? About how far, in your opinion?

A. Well, I don't know. I don't know what this scale here is.

Q. Just about; you can mark it on the map.

A. As nearly as I can say it would be just about below the Big Island there.

Q. Below the Big Island?

A. Yes, sir, where I testified before. I could not give you the miles here. If you went around by the river it would be a good deal farther than it would be straight across.

Mr. Fryberger: I think that is all. There may be some other questions we will want to ask Mr. Howard later on.

(A short recess was here taken.)

Another map produced by Mr. Fryberger was marked Minnesota Exhibit 3.

Mr. Fryberger: Gentlemen, I wish to ask you with refer-
28 ence to Minnesota Exhibit 3 whether or not it will be admitted that that is a map from the office of the United States Engineers, in the City of Duluth, showing the locus in quo in this case?

Attorney-General Owen: Is this another map?

Mr. Fryberger: This is another map, 1912. It is approved by the War Department, isn't it? All I want you to do, is to admit that it is a map from the office of the Engineers, and save us calling one of the engineers. I will add to that statement: Excepting the red lines which have been placed on this map by Mr. Howard, the same as the prior map.

Attorney-General Owen: We will admit that, what Mr. Fryberger asks us to admit.

By Mr. Fryberger:

Q. Mr. Howard, calling your attention to Minnesota Exhibit 3, I will ask you if you recognize that as a map of the head of the Lakes?

A. Yes, sir.

Q. Including the bay of St. Louis, upper and lower?

A. Yes, sir, it is.

Q. Have you seen this before?

A. Yes, sir.

Q. Did you place those lines in red on this map?

A. I did.

Q. When?

A. Yesterday.

Q. At the request of whom?

A. Mr. W. D. Bailey.

Q. And you put the lettering on, did you?

A. Yes, sir.

Q. Calling your attention to the line in red marked A to
29 B and extended on from B to C, I will ask you what that line indicates?

A. That line indicates the course of the channel that was taken to go up the river, to take the north channel.

Q. Prior to the time.

A. Prior to the time there was any dredging done.

Q. I will ask you what the red line from E to F indicates?

A. E to F, that was an old channel that went around there in the early day. I notice by this map that it is filled up in places since.

Q. That is, to the south of the letter F it is filled up?

A. To the south of the letter F.

Q. But there was a channel all the way through there?

A. In the early days a channel went all the way around in about the direction I have marked here, from the letter E to the letter F; you could go through there with the Lottie Bernard.

Q. You say you could go through there with the Lottie Bernard?

A. Yes, sir.

Q. Drawing about how many feet of water?

A. About seven feet.

Q. What is the red line from A extended on to B and from B to D? What is that continuous line?

A. That indicates the same channel, only leaving that channel at B and taking the south channel up the river, around the other way.

Q. Now, what is this line running from the Superior entry, in white, simply colorless——

A. Yes, sir.

Q. White paper; running through the bay of Superior, with fig-
ures on it, evidently soundings, and running through lower
30 St. Louis Bay and on up upper St. Louis Bay, clear up as far as Spirit Lake; what does that indicate?

A. That indicates the channel.

Q. That is the dredged channel?

A. Well, of course it is dredged from here up to——

Q. When you say "here" that is the Superior entry?
A. The Superior entry, up to Big Island—somewhere there.
Q. Where it shows white?
A. Never was dredged in here where it shows white.
Q. State whether or not that dredged channel followed the original channel all the way?
A. Well, practically it did.
Q. It shows some places different, does it not, on the map?
A. Yes, it shows different down here. (Indicating.)
Q. That is northerly of Big Island?
A. Northerly of Big Island, it shows there the channel, clear around on the inside of that——
Q. Of that little island?
A. Of that little island.
Q. Let us mark that little island while we are at it.
A. What do you want to mark it?

Mr. Fryberger: What is the last we have got marked there?
The Commissioner: G was the last one.
Mr. Fryberger: We will mark it something else.
Witness: We had it G on the other one. Do you want it G here?
Mr. Fryberger: No, I want this island marked K.

(The same was marked by the witness as requested.)

Mr. Fryberger: It is marked K.

31 Q. Now, where did the north channel, what you call the north channel——

Attorney-General Owen: I do not see any K on there.
Witness: Well, it is right there, but I put the blotting paper on it.

Q. Where did the north channel—that is, what was known as the north channel at that time—pass through this island that you have marked K? To the westerly of the letter K?
A. Yes, sir, just to the westerly of the letter K.
Q. That channel has filled up since that time?
A. I don't know much about it. Yes, I know it is filled up there.
Q. But you know it was a channel at that time?
A. It was a channel at that time. And then the channel changed again, here. (Indicating.)
Q. When you say "here" you mean that one between the two islands marked "Sand Island"?
A. Yes, sir.
Q. There are two islands each of which is marked "Sand," and the channel went between the two islands marked "Sand"?
A. Yes.
Q. And to the northerly of the westerly island marked "Sand"?
A. Yes. You ask me if there was any change. There was a change there between those sand islands.

Mr. Fryberger: Mark the Big Sand Island, L.

(The witness marked as requested.)

Attorney-General Smith: May I ask a question? Is the one marked L right west of the red spar No. 32?

Mr. Bailey: What?

32 Attorney-General Smith: Red spar, marked Rep. No. 32.

Mr. Fryberger: I do not see that, General.

Attorney-General Smith: It is right on the north side of the dredged channel.

Mr. Fryberger: Is that 32? I cannot see it. The map is broken at that point.

Attorney-General Smith: Yes.

Mr. Fryberger: This is the one, that is marked L. The map is broken there; we cannot see the number.

Q. Now, calling your attention to Minnesota Exhibit 3, and this hole showing deep water, extending from the red line between A and B, I will have you mark that G on this map at the point.

A. Right here? (Indicating.)

Q. Yes, right there.

(The witness marked as requested.)

Q. Put that down a little farther; make more of a tail to that G; bring it down towards you. Now that is G all right, I guess.

A. Yes.

Q. Now, calling your attention to the channel, starting at the point G, and running northerly, and coming around through Carnegie coal dock marked on the map, and another place marked "Coal dock," I will ask you if that channel connected up with the channel at the point marked "C" by you?

A. No, sir.

Q. Where was the bar that shut off this hole, running from the north of G?

A. The bar was just above this island, somewhere close to——

The Commissioner: What island?

33 Witness: Well, that island; we have not got any mark on it.

Q. Well, we will put a mark on it right now. We will mark that island "N".

(The witness marked an "N" at the point, as requested.)

Q. A bar, you say, was to the north?

A. To the north of island "N".

Q. But those other little islands, three in number, north of the island marked "N", were they there in those early days when you were familiar with the situation?

A. I think so. I would not say for sure. There was a lot of rushes and boggy places in there.

Mr. Fryberger: We will offer in evidence Minnesota Exhibit 3, being the Lydecker map of date 1912.

Attorney-General Owen: It being understood that the red lines are no part of the map?

Mr. Fryberger: The red lines were put on by Mr. Howard for illustrative purposes.

The Commissioner: The map may be received, with the understanding that the lines and the lettering were put on by the witness.

Mr. Fryberger: That is all, Mr. Howard.

Cross-examination.

By Attorney-General Owen:

Q. Mr. Howard, when did you first commence navigating these waters?

A. When I was a boy.

Q. How old?

A. About eight or nine years old.

Q. What time was that?

A. Well, it must have been around '68, '9, or '70, some
34 where along in there.

Q. '68, did you say?

A. Yes.

Q. What was the nature of your navigating at that time?

A. Well, as I said I used to pole rafts and row small boats. We had no steamboats here then.

Q. Where did you form these rafts?

A. Up the shore, along little Pokegama and where West Superior would be at the present time, in Wisconsin.

Q. The logs were dumped into Pokegama Bay?

A. Some of them, and along anywhere on the shore, off where West Superior now stands, where the coal docks are.

Q. And you formed your rafts in these bays?

A. Yes, sir.

Q. Where the logs were put in the water?

A. Yes, sir.

Q. Now, when you were eight or nine years old, what did you do on these rafts?

A. Well, I generally did the cooking there and had to do poling besides.

Q. How much poling did you do?

A. Well, I did about as much as anybody did. A boy had to do a man's work them days.

Q. What course would your raft take formed in Pokegama Bay, for instance? Where would you take these rafts to—to your mill at Howard's Pocket?

A. Yes, Howard's Pocket; just take them along the shore and pole them.

Q. What course did your rafts take?

A. We just followed the shore.

Q. Just followed the shore right along. In those days you did not know much about channels, did you?

A. Well, all we knew about them was when we would get
35 our poles in deep water, lots of places there, and I know my father knew afterwards about these channels because he took the boat up there.

Q. Now, you are not to testify what your father knew.

A. No.

Q. You are just to testify what you know.

A. All right.

Q. You did not pretend to follow any channel when you were coming down with these rafts?

A. No, sir.

Q. There was plenty of water anywhere to float your rafts?

A. Always had a line on the shore to hold them against the wind.

Q. So far as your raft enterprise was concerned you did not learn much about continuous channels, did you?

A. No, sir.

Q. Now how long did you continue in that rafting business?

A. Well, for a number of years.

Q. How many years?

A. Well, ten or twelve, I should say.

Q. That would take it up to about 1880?

A. 1880; yes, sir.

Q. And during that time that was about all the work you did on that water?

A. Well, I don't know whether we had that steamboat there before 1880 or not.

Q. You would not swear that you did?

A. No, sir. Along about that time, though.

Q. Well, you think you got the steamboat along about 1880?

A. Well, I think so; yes, sir.

Q. Do you remember how old you were when you got the steamboat?

A. Well, in 1880 I was about 23 years old.

Q. And what job did you have on the steamboat.

A. I was wheelsman

Q. Pilot?

A. No, sir, not pilot; wheelsman.

36 Q. What was the nature of that work?

A. Well, to steer the boat.

Q. How do you distinguish that from pilot?

A. A pilot tells us where to steer.

Q. Were you wheelsman right off as soon as you got the boat? Was that your first work on the boat?

A. I remember I wheeled her down the lake and up the river, both. I could not say as I did right away; no, sir.

Q. Can you give us some idea as to what year you commenced operating that boat as wheelsman?

A. Well, it was before 1880.

Q. Before 1880?

A. Yes, sir.

Q. You think you were mistaken a moment ago when you said you got the boat in 1880?

A. Well, I tell you: I know it was before 1880 because I was married the fall of 1880. It was before I was married.

Q. How long before?

A. Well, a number of years. I should say it must have been '72 to '74 or '6, along there, that we had that boat—thinking it over.

Q. Then how old were you?

A. I would be 15 or 16 years old.

Q. Did you tow these rafts down to the boat after you got it?

A. Yes, sir.

Q. Then how long were you poling the rafts down?

A. Well, I don't know; a few years there; I cannot designate any time between the time we got the boat and the time we were working along on the rafts there; I have not looked it up at all. I did not know anything about testifying in this case at all. I can
37 look the dates up, though, I think, and get them pretty accurate.

Q. How would you verify the date you got your steamboat, for instance?

A. Well, I think I can find some of my father's books and look them over and see where we took the lumber down the lake—things of that kind.

Q. Now, did you act as wheelsman as soon as he got the boat?

A. I could not say.

Q. Was that your first——

A. I could not say whether I did or not. I would not be surprised, but I was wheeling probably the first year we had her.

Q. Have you got any way of telling that?

A. No, sir, I have not; not the first year.

Q. Was that first boat on the bay?

A. No, I guess not.

Q. How many other boats were there on the bay at that time?

A. I could not tell you just how many other boats there were here. I guess the Agate and the Amethyst were here, a couple of small tugs.

Q. How long had they been here before you got yours?

A. I could not tell you.

Q. Have you any idea how long they had been on the bay before you got your boat?

A. No, I have not. I know I was a boy when the Agate first came here.

Q. Were there any other boats on the bay besides those you have mentioned?

A. Why, yes, there were other boats across here.

Q. What were they? What were their names?

A. I think there was one named the Kasota; I am not sure.

38 Q. What other ones?

A. I was trying to think of their names. Well, sir, I can't tell you the names of any others.

Q. What did those boats do?

A. The Kasota used to run between Superior and Duluth.

Q. What did the other boats do?
A. I did not tell you that I knew of any other boats.
Q. You mentioned three, I think.
A. Well, the Agate and the Amethyst were small tugs. They did towing business.
Q. What did they tow?
A. Towed logs. I don't know what they did.
Q. You don't know what they did but they were towing-tugs, small tugs. How familiar were you with those boats and what they did and where they ran?
A. These other boats? I was not very familiar with them.
Q. Do you know how much water they drew?
A. I don't know exactly; no, sir. I guess they drew around six feet, or seven.
Q. That is just your guess?
A. Well, I know that must be about their draft. I have known them for years since.

Mr. Fryberger: What was that?
Witness: I have known them since that time, here; they have been right here in the harbor for a good many years afterwards. I know they must draw around six or seven feet of water.

Q. How much did your boat draw?
A. She drew about seven feet, light.
Q. Now what did you say was the name of your boat?
A. The Lottie Bernard.
39 Q. After you got the Lottie Bernard you used her to tow the logs down Superior bay?
A. From St. Louis bay.
Q. Yes, I mean St. Louis bay. And were most of those logs rafted in Pokegama Bay?
A. Rafted right along the shore there.
Q. How many trips would you make up the bay during the season?
A. Well, we did not make very many. Generally towed enough down (we had a small mill) to last us. We did the most of the running on the lake.
Q. Give us your best estimate of the number of trips you made up the bay?
A. Well, say six or eight, probably.
Q. During the season?
A. Yes, sir.
Q. Now, during that time did you see any other similar craft?
A. There was not any other similar craft at that time.
Q. So that so far as you know of steamboat navigation during that time, your knowledge is confined to your own boat, which made six or eight trips a season up as far as Pokegama Bay?
A. In the early days, yes, sir.
Q. Now, you say in an early day. Fix the years that you have in mind when you make that statement.

A. Well, say up to 1885.
Q. 1885, and beginning in what year?
A. Well, say beginning in '70 to '85.
Q. From 1870 to 1885. You think you got your boat about 1870, do you?
A. I mean the rafting and all and my experience on the bay; that is what I had reference to.
Q. I was just talking about steamboat experience.
A. Then, what is the question?
40 (The pending question was read by the reporter.)
Q. That is, your steamboat experience.
A. About '73 or '4.
Q. And extending up to 1885?
A. Well, no, I don't think we had the boat that long.
Q. Well, that is what you said a few moments ago. Now do you want to correct that?
A. Well, I am saying I had no other experience than on that boat, that is, the steam boat, until 1885.
Q. From 1873 or 1874 up to 1885?
A. Up to 1885.
Q. Well, was your experience with this boat continuous and uniform from 1873 to 1885?
A. Well, all the time we had the boat I was up that river every year on it.
Q. How many years do you think you had the boat?
A. I am not able to tell you, sir.
Q. What is your best judgment?
A. I should say somewhere between seven and ten years.
Q. Now, in that work you did not pay any attention to channels, did you?
A. Yes, you bet we did.
Q. What?
A. We certainly did.
Q. In towing your raft down, did you pay any attention to channels?
A. Why, certainly.
Q. And you took the channel that you indicated in red lines on that map?
A. Why, when we went up the shore; yes, sir.
Q. What?
A. Yes, sir.
Q. That is the route you always took in towing your logs down?
A. Why, no; we generally tried to come down the south channel marked there—I can't tell you just what the letters are. I
41 can tell you there by looking at the map.
Q. The south channel?
A. The south channel; yes, sir. From A to ——.

Mr. Fryberger: The south channel is south of the island and the north channel is north of the island.

Q. On Minnesota Exhibit 1, the channel which you generally took you have indicated in red lines?
A. Well, from A to D, coming up this way.
Q. A-B-D?
A. A-B-D; and going into Little Pokegama used to take this route up here. (Indicating.)

Mr. Fryberger: What is that?
Witness: That is from E to F.

Q. You had to take that route to get to Little Pokegama?
A. In there, yes, sir.
Q. Did you ever attempt to take the channel from C to G?
A. Yes, sir.
Q. How often did you travel that?
A. Well, in later years we traveled it pretty near every day.
Q. From C to G?

Mr. Fryberger: Now wait a moment.
Attorney-General Owen: Just let me ask these questions. What do you mean by later years?
A. From 1886.
Q. From 1886 on?
A. Yes, sir.
Q. What were you engaged in at that time?
A. Engaged in excursion boating.
42 Q. Excursion boat business. Now why did you travel the channel C to G in those years?
A. Well, we used to stop at Spirit Lake.
Q. At Spirit Lake?
A. Yes, sir.
Q. Couldn't you reach Spirit Lake by the other channel just as well?
A. The south channel?
Q. The channel A to B to D.
A. No, sir. Well, we could go that way, but it is away out of your way, go away around one island and go back two or three miles to get there.

Mr. Fryberger: For my own information, let me ask you this question, Mr. Owen. What do you mean by C to G? Do you mean the red line?
Attorney-General Owen: I mean the red line; that is what we are talking about.
Mr. Fryberger: The red line, C to D?
Attorney-General Owen: Yes, sir.
Mr. Fryberger: That is all right; I did not understand you.

Q. Now, were there any other excursion boats running up there at that time?
A. I think not.
Q. Or any other craft of any kind?

A. I guess there was other craft. I think they were towing some up in that way.

Q. What channel did those craft take?

A. Why, I guess they took both the north and the south channel.

Q. Well, did they take the channel A-B-C, or the channel G to C?

A. They took the one from A to C.

Q. Look at that map. (Placing map before the witness.)

A. I understood they took the channel from A to—what is that?

Q. B.

A. To B, and to C.

43 Q. And you with your excursions took the channel from G to C?

A. No, we did not. We took this one with the red line, right through there, from the letter A to B and C.

Q. Now, I asked you a while ago whether you used the channel G to C, and you said you did with your excursion boat.

A. I never considered that—not that channel around there. I had reference to this channel, from G to C, through there, the one I had marked; never used that other one in my life.

Mr. Fryberger: That is, that northerly curve?

Witness: The northerly curve.

Attorney-General Owen: Marked G to C. I suppose, in order to designate that carefully, there ought to be a letter put in there. (Indicating.)

Witness: Yes.

Q. Now what year did you start the excursion business?

A. I think it was in 1886.

Q. And how long did you continue that?

A. Well, for several years. I don't know how many years we continued that; three or four, I guess.

Q. Three or four years?

A. Yes.

Q. And during that time what was your job on the boat?

A. I wheeled and acted as purser, and staked out this channel before the rushes come up; I went up and sounded the river and put the buoys up.

Q. Well, that was not your job on the boat?

A. That was my job on the boat, because they let me off

44 to go up there to do it.

Q. Well, explain that now—since you have gone into it.

A. Eh?

Q. Staked out what channel?

A. Staked out the best water along through the turn up there to Spirit Lake, down by this island marked—M, is it?

Q. Well, you take it and tell us.

A. (Referring to the map.) I used to put the buoy here for the shortcut—

The Commissioner: At what point.

Witness: At the point B; I put two buoys there, one at the short-cut and one on the other side of a little island you have got on the other one—I don't know what it is; M isn't it? This around here.

Q. Well, let us have this other map then. You put a buoy at what point?

A. The point on this bar.

The Commissioner: What exhibit?

Witness: Marked B on Minnesota Exhibit 3. I buoyed that around this island, around north and east of island M; some buoys at island K, also at island L. You could make the run up there before the rushes came up.

The Commissioner: Referring to Minnesota Exhibit 3?

Witness: K and L on Minnesota Exhibit 3.

Q. Who helped you to do that?

A. I had a man and a boat; I don't remember who it was now.

(At this hour, twelve o'clock noon, a recess was taken until two o'clock P. M. at which time the witness was recalled and his cross-examination resumed as follows:)

45 By Attorney-General Owen:

Q. Now, Mr. Howard, this morning you spoke of a bar which prevented the navigation of the channel marked G-C upon Minnesota Exhibit 1.

Mr. Fryberger: Now let us see if I understand that, Mr. Owen. That G-C is the channel—you mean there? (Indicating.)

Attorney-General Owen: Yes.

Q. Now where is that bar located?

A. It is located in here. (Indicating.)

The Commissioner: Located where, Mr. Howard?

Witness: Well, say north of C.

Mr. Fryberger: North of point C?

Witness: North of point C, about where C is—about there.

Q. Now what are the soundings marked on that map at that point?

A. Well, there is seven—I don't know what that is right along that C there; that is probably the place right across there. Seven, seven, twelve.

Q. What about the depth of the water on the channel that you say you followed, marked A-F? Read the soundings through there.

A. That is from here? (Indicating.)

Q. No, A-F.

A. Down this way? E to F is it?

Q. Yes, E to F.

A. Well, I can't see that on that line. There are two figures there. 15, 15, 15; and the red line runs over some there with two figures in; and 13, 12, 10, 7, 10, 10, 13, 10, 7, 8, 30.

Q. Three sevens there?
A. Well, there is a lot of 7's here, but they are a little to the north.

46 Q. Right on the red line?
A. Well, there is 11 there, where the channel runs through, I suppose.

Q. Now, according to this map, there was just as shallow water on the line E-F that there was on the line A-B-D, was there not?
A. Yes, sir.
Q. Then, if you could get through the channel marked E-F, it was possible to get through the channel marked A-B-D, wasn't it?
A. That is the way we always went, A-B-D; yes, sir.

Mr. Fryberger: Is that B?
Witness: That is A-B-D, around this way.

Q. I mean the channel G-C.
A. How?
Q. G-C.
A. Oh, G-C?
Q. Yes.
A. I don't know. We never used that channel.
Q. You never used it?
A. No, sir.
Q. Make a letter up there, will you, in red ink?
A. What did you say?
Q. A letter up there, so that we can distinguish that.
A. Do you mean up here? (Indicating.)
Q. No, about there.
A. About there? What do you want there?
Q. The next letter. What is the last letter you have used?
A. Well, on the other map we had an M, you know.
Q. Well, it doesn't make any difference. Put H there.

Mr. Fryberger: Right on the channel.
Witness: Right on the channel, right in there.

Q. Yes. Now the channel we have referred to here several times as the channel G, G-C, is now marked G-H-C?
A. Yes, sir.

47 Attorney-General Owen: I think that is all the questions I want to ask, but Mr. Hudson wants to ask some questions.

Cross-examination by Mr. T. T. Hudson:

Q. Mr. Howard, referring to Minnesota Exhibit 3, I will call your attention to a letter marked K this morning on an island which is north of Big Island.
A. Yes, sir.
Q. And show you the white channel between that letter K, of the island upon which the letter K is located, and Big Island, and ask you to state what that is.

A. That is the dredge channel.
Q. That is the dredge channel?
A. Yes, sir.
Q. That is, that has been dredged within how long a time?
A. I don't know when that dredging was done; some years ago.
Q. Where was the original channel with reference to this island where K is marked?
A. To the north of it.
Q. That was the only deep channel, wasn't it, between Big Island and the Minnesota shore?
A. I think it was.
Q. The Minnesota side.
A. Yes, sir.
Q. In dredging this new channel, was the waste used to fill part of the channel there?
A. Yes, sir.
Q. It was.

Mr. Fryberger: When you say "there," Mr. Hudson, please indicate.
Mr. Hudson: At K.
Mr. Fryberger: Just to the westerly of K, on what now shows a solid island.

Q. Prior to the dredging of this channel there was a small
48 island there where K is now located, was there not?
A. I believe there was; yes, sir.
Q. And all the vessels and boats that drew seven or eight or ten feet of water, that passed up westerly of that point where K is located on this channel, passed to the north of K?
A. Yes, sir.
Q. In the channel?
A. Yes, sir.
Q. As a matter of fact, between the island on which K is located and Big Island the water was quite shallow, wasn't it?
A. Yes, sir.
Q. I now call your attention to a point farther up the river and to what appears on the map to be an island marked "Sand," on which you put the letter L in red this morning.
A. Yes, sir.
Q. I call to your attention what appears to be a channel with soundings that are marked 22, 26, 24, 26, 20, 20 and 22, immediately west of that island, and ask you what that is.
A. That is the old channel.
Q. That is the old channel. And this channel marked 22 and 22½ and 20, and so forth, between Sand Island with the L on and Big Island, is the artificial channel?
A. Yes, sir.
Q. Before this channel was cut through there, was this channel, which is north and westerly of L, which you have stated is the original channel—was that the only channel between the Minnesota side at Spirit Lake and Big Island up the river?

A. Well, the only channel with any depth of water. Of course this is all open water through where the artificial now is.

49 Q. But it was shallow water?

A. It was shallow water. I should say six or seven feet through there.

Q. All vessels that drew ten to fifteen feet of water passed to the north and west of this island that is marked "Sand" with the letter L on?

A. They would have to; yes, sir.

Q. They would have to? Well, they did as a matter of fact?

A. Yes, I guess so.

Q. Then tracing farther to the south from the west end of the old channel, which is immediately southwest of the island marked L, that original channel continued down until it reached the shore of Big Island, did it not?

A. Why, that was the course, yes, sir; right through to the Big Island.

Q. And then the river was confined to narrow limits, the main river?

A. Yes, sir.

Q. After leaving the Big Island, by a horn of land on the northerly side and the Wisconsin shore on the southerly?

A. Yes, sir.

Q. Southeasterly.

A. The river is well defined down to about that point there.

Mr. Fryberger: What point is that?

Witness: That is the northwesterly point of Big Island. All around here it is——

Q. Well defined?

A. Yes, sir.

Q. And as a matter of fact it was so well defined that it was used for navigation purposes around to the northerly and west-

50 erly of Sand Island with the letter L mark, and continued as shown on this map down to north of the island upon which K is marked; was it not?

A. Well, it was not very well defined. The point from where I stated on the northwest corner of Big Island to a point here by the west end of Sand Island marked L was not well defined there. It was just open water. You had to take the general course.

Q. As a matter of fact, these soundings are correct, are they not?

A. I expect they are.

Q. And show there is a deep channel of water there; isn't that a fact?

A. I suppose they are correct.

Q. And as a matter of fact all boats drawing ten to twelve feet of water that went up there followed that channel?

A. Oh, no, not all boats; they go up this other south channel, lots of them.

Q. Well, in the south channel before this was dredged out at this point?

A. Yes, sir.

Q. There is seven feet marked at the cross-mark immediately on the line between B and D, about half way between those points; there appears to be only seven feet of water, according to this map, isn't there?

A. Yes, sir; that is just below the line.

Q. Just below the line.

Mr. Fryberger: Mr. Hudson, did you say that was before it was dredged? Was that ever dredged as a matter of fact?

Witness: This was never dredged. You mean before this was dredged?

51 Mr. Hudson: Before this was dredged, here. (Indicating.)

Mr. Fryberger: There was no dredging there, was there?

Witness: I do not think so. This never was dredged. (Indicating.)

Mr. Fryberger: From B to D never was dredged?

Witness: No, sir.

Q. That that shows the original soundings if that has never been dredged?

A. Yes, sir.

Q. The soundings at the time this map was prepared, anyway?

Mr. Bailey: That is 1912, isn't it?

Q. Mr. Howard, the current of the river, flowing down west, and north of Big Island, was more rapid at the point shown by this original channel than any other point, wasn't it? The current more rapid?

A. There never was very much current there. At times there was.

Q. That is not the answer to the question.

A. Well, I could not see any difference through there in places, north of the island.

Q. You perhaps never paid any particular attention to it?

A. Probably not.

52 Q. Mr. Howard, I want to call your attention to Plaintiff's Exhibit 3 and to that bar that you spoke of that prohibited the use of this so-called hole that extends under what is marked as "Carnegie Coal Company" and also "Coal Dock," being in what is marked on Exhibit 1, G, H, and C. I will ask you if that bar shows on Defendant's Exhibit 3 much more plainly than it does on Exhibit 1?

A. Yes, it does.

Q. Shows the islands there in front of that hole that is upon the line B and C and the hole to the north of it—— those three islands?

A. Yes, sir.

Q. And that is the shoal water that you speak of?

A. Yes, sir.

Q. I will ask you whether or not there was ever any dredging done on the line B to D?

A. No, sir.

Q. Showing the witness Minnesota's Exhibit 4, I will ask you what it is?

A. That is the Steamer Emerald.

Q. Is it a photograph?

A. Photograph of the Steamer Emerald.

Q. When was that taken?

A. Between '86 and '90 somewhere.

Q. Is it a correct picture of the boat?

A. Yes, sir.

Q. Where was that taken?

A. Taken up above Big Island between there and Fond du Lac.

Q. Right on the St. Louis Bay?

A. On the St. Louis River.

Q. Was that the boat that you spoke of in your testimony this morning?

A. That is one of them, yes, sir.

Q. What one is that?

53 A. That is the one we were running excursions to Fond du Lac.

Q. How many years did you run that?

A. A couple, I guess.

Q. How many feet did that draw?

A. I think about seven feet of water.

Q. Is that the boat that you said you were running at the time you said you put our buoys along this channel?

A. Yes, sir.

Q. You did that each season?

A. Yes, sir.

Mr. Fryberger: I offer in evidence as a part of this examination Minnesota's Exhibit 4, being a photograph marked by the Reporter, dated July 17, 1917.

Mr. Owen: Objected to as incompetent, irrelevant, immaterial, and on the ground that it hasn't properly been proven as a photograph.

The Commissioner: Received subject to the objection.

Q. Handing you Minnesota's Exhibit 3, I will ask you, Mr. Howard, to locate on this map Spirit Lake station or dock?

A. I think that's it right there, the little dock.

Q. Let's mark a letter on that. I would like to have that marked in red ink.

The Commissioner: "O."

Q. You have marked with the letter "O" where the Spirit Lake dock was? Is that it?

A. Yes, sir.

Q. And when you went up this north channel, was it necessary in order to get to the dock to take the north channel?

A. Yes, sir.

Q. Was there any other objection to the south channel, the one you said you used so much more than the north channel,

54 outside of this Devils Elbow, I think you call it, up here?

A. No, sir.

Q. That is the only objection?

A. Yes, sir.

Q. Did that sharp angle become more objectionable?

A. It was always objectionable for a large boat.

Q. Mr. Howard, have you any interest of any nature or description in this lawsuit?

A. No, sir, none at all.

Q. Either directly or remote?

A. No, sir.

Mr. Fryberger: That is all.

Mr. Bailey: I just want to ask one question, Mr. Howard, that Mr. Hudson referred to, that is northerly and westerly of Big Island, whether the bar in there was of a shifting nature along where these two islands marked "sand" were?

The Witness: Yes, sir, it was. The current comes down strong from the southwest end of the Big Island down to this point of Big Island.

Q. You now refer to the northwest corner?

A. Northwest corner. Then there is a very strong current running around this way.

Q. That is around the south channel?

A. Yes, sir.

Q. And as it gets to the northwest of Big Island it spreads out and the bottom there is composed of sand?

Mr. Owen: I object to this as leading.

A. It is soft muddy bottom.

Q. What are these islands that are marked here formed of?

A. Formed of sand and rushes.

Mr. Bailey: I think that is all.

55 Cross-examination.

By Mr. Owen:

Q. Now, Mr. Howard, Exhibit number 3 was made some time after Exhibit number 1, was it not?

A. Yes, sir.

Q. How long?

A. I don't know; I didn't notice the date.

Q. And Exhibit number 3 is made after the extensive dredging operations had taken place?

A. Yes, sir.

Q. Also maps are drawn at different scales, are they not?
A. Yes, sir.
Q. So that what is represented on Exhibit number 3 doesn't necessarily show the conditions existing at the time Exhibit number 1 was made?
A. Well, I guess they are about the same except the dredging work was done.
Q. You say you guess they were. Now, Exhibit number 1 was published in 1861 and founded on surveys presumably made before that. Now, Exhibit number 3 doesn't necessarily show the conditions existing at the time Exhibit 1 was published or at the time the surveys upon which Exhibit number 1 is based—— were made?
A. I couldn't say about that.
Q. That would seem reasonable, wouldn't it?
A. Of course there is a lot of changes on this map, improvements.
Q. And Exhibit number 3 presumably represents conditions existing when Exhibit number 3 was published rather than conditions existing back in 1860?
A. Certainly.

56 Redirect examination.

By Mr. Fryberger:

Q. Outside of what the maps show and your own personal knowledge, you know nothing about how they made these maps?
A. No, I know nothing, only what it shows here.
Q. Mr. Howard, we haven't got these photographs finished yet and I wanted you to identify a couple of maps. I want to ask you if you have any serious objection to my using these other two maps as original maps, that you gave me. Have you any objection to my using these original maps you gave me, the one of 1892 and 1896?
A. No, sir, none at all.
Q. Mr. Howard, I show you Minnesota's Exhibit 5, being a map with the legend sectional map of Douglas County, Wisconsin, 1892, scale two miles per inch, published by Brooks & Smith, real estate dealers, Superior, Wisconsin, Milwaukee Lithograph & Engraving Company. Did you ever see that map before?
A. Yes, sir.
Q. You gave that to me yesterday or day before?
A. I did.
Q. How long has it been in your possession?
A. I guess ever since it was published.
Q. And that was a map that was in current use here at the time?
A. Yes, sir.
Q. 1892 and since?
A. Yes, sir, it was.
Q. That shows the situation of the vicinity in question, does it not, and generally here?
A. It does.

Mr. Fryberger: I offer in evidence as a part of this examination Minnesota's Exhibit 6.

57 Mr. Owen: Objected to as incompetent, irrelevant and immaterial and not the best evidence.

The Commissioner: Received subject to the objection.

Q. Mr. Howard, I call your attention to the dotted line on this map starting out in the lake, which is marked "State boundary" on the northerly side "Minnesota", and on the southerly side "Wisconsin", which runs through the Superior opening into the Bay of Superior and up St. Louis Bay past Spirit Lake and finally up St. Louis River. I will ask if that dotted line on that map was on there at the time you bought it?

A. Yes, sir, it was.

Q. You bought that map in just the same condition it is now in?

A. I did.

Q. Mr. Howard, I show you Minnesota's Exhibit 6 and ask you if you ever saw that map before?

A. Yes, sir.

Q. When did you give it to me?

A. Day before yesterday I believe.

Q. How long has that been in your possession?

A. Well, probably from 1896, I bought it some time after that.

Q. Soon after they made it?

A. Yes, sir.

Q. Has it been in your possession ever since?

A. Yes, sir.

Q. Does that correctly show the situation at the head of the lakes, Superior Bay and St. Louis Bay up to date?

A. Yes, sir.

Q. I will ask you if the dotted line starting in Superior entry in Lake Superior, running through the Bay of Superior through the center of the Bay of Superior and approximately through the center of St. Louis Bay and up the St. Louis River and past Spirit Lake and marked "State line" in upper St. Louis Bay was on that map

58 at the time you purchased it?

A. It was.

Q. Map is in the same condition as it was at the time you used it?

A. Yes, sir.

Q. Is that a map that was in current use at the head of the lakes at the time you got it?

A. Yes, sir, it was.

Mr. Fryberger: I offer in evidence Exhibit 6, being a map marked Douglas County, Wisconsin, 1896, published by Sandberg, compiled from Government plats, showing all main traveled highways, railroads, boundaries of towns, and location of school-houses and railroad stations and post-offices, scale, one-fourth inch to one mile.

Mr. Owen: Objected to as incompetent, irrelevant, immaterial, not the best evidence.

The Commissioner: Received subject to objection.

Cross-examination.

By Mr. Gard:

Q. Mr. Howard, in your experience as a navigator, did you navigate Superior Bay?

A. Yes, sir.

Q. How early?

A. Well, '68, 1868 and since.

Q. With what kind of a boat did you navigate it?

A. All kinds of boats.

Q. Well, how many different kinds of boats did you have?

A. I didn't have any of them.

Q. How many different kinds of boats did you navigate on?

A. Navigated on small boats, canoes, side-wheel boats, screw-wheel boats.

59 Q. Were you familiar with the channel after you came through the entry there at the natural entry?

A. Yes, sir.

Q. Do you know where it ran?

A. I do.

Q. Is it shown correctly on the Mead map?

A. I will take a look at it. I can tell you.

Q. Exhibit number 1. Now there is marked on the channel here "St. Louis River pier head light-house", isn't there?

A. Yes, sir.

Q. At the natural entry?

A. Yes, sir.

Q. And does the light streak with sounding figures on running close to Minnesota Point indicate where the channel was?

A. Yes, sir.

Q. That was the correct indication of the channel that existed when you first knew Superior Bay, isn't it?

A. Why, I think about right, yes, sir. I know it seems to me it went a little closer to the point there. There was deep water very close to the point along there (indicating).

Q. That is Minnesota Point, you mean?

A. Yes, sir.

Q. That is just a little above the natural entrance?

A. Yes, sir.

Q. You think it went a little closer to Minnesota Point?

A. I wouldn't say that, of course—you could go right up to the shore there.

Q. The boats did go right up to the shore?

A. Yes, sir.

Q. There was deep water there?

A. Yes, sir.

Q. And there was a channel all the way up Superior Bay, was there not?

A. Yes, sir.

60 Q. And through between Connors and Rice's Point?

A. Yes, sir.

Q. And between Rice's and Connors Point or just after you get through between Rice's and Connors Point the channel went very close to the Minnesota shore, didn't it?

A. Yes, sir.

Q. And it ran very close to the Minnesota shore out through where the Northern Pacific bridge is now located, didn't it?

A. Yes, sir.

Q. And it was a well-known channel down through there, wasn't it?

A. Yes, sir.

Q. And used by navigators?

A. Yes, sir.

Q. Now, Mr. Howard, you knew that these lines on these maps that you have identified, were just random lines, didn't you. Minnesota's Exhibits 5 and 6; you knew that these lines were just random lines on that map, random or approximate?

A. I don't know anything about that.

Q. Well, you know that they didn't follow the channel, don't you?

A. That line follows pretty close the channel right across the bay there and right by the end of that point.

Q. Didn't you just testify that the channel ran very close to the Minnesota shore after it gets through between Rice's and Connors Point?

A. I did, but that 's very close to it right there.

Q. Do you regard that as being the same location; do you regard the state line—the line marked "State line" on Minnesota's Exhibit 5 the same as the channel shown on Mead's map through Superior Bay and into St. Louis Bay, do you, on Exhibit 1?

A. There is a little difference in it on this map than that line.

61 Q. Do you regard theme as substantially different?

A. Why, no, not substantially.

Q. Then you know, don't you, that this was simply a random and approximate line on Exhibit 5 I mean?

A. I don't know what authority that was put on there by. I don't know anything about that.

Q. You never knew of anybody going by that for the State line, did you?

A. No, sir, I never thought anything about the Stateline.

Q. As a matter of fact, that was a real estate man's map, wasn't it, put out as an advertisement—Exhibit 5?

A. I don't remember; I guess I bought it.

Q. Are you sure you bought it or got it of a real estate man as an advertisement?

A. I never got it from any real estate man because I didn't know any of them.

Q. You see this is put out by Brooks & Smith, don't you, real estate dealers?

A. I never knew either one of them—Yes, I guess I did too, if that's George Brooks.

Q. Do you have a distinct recollection of buying that map?
A. No, sir.
Q. You do know that these real estate dealers just put that map out as an advertisement, don't you?
A. I do not.
Q. Didn't you get it of somebody?
A. I couldn't tell you how I got it; I probably bought it.
Q. You don't have any recollection of buying it, any distinct recollection?
A. No, sir, I do not.

Q. Do you know how you got the Sandberg map, Minne-
62 sota's Exhibit 6?

A. I expect I bought it, the only way I know of getting it.
Q. Do you regard the State line that is marked on that map Minnesota's Exhibit 6 as substantially the same as the channel shown on the Mead map, Minnesota's Exhibit 1?
A. There isn't much difference, only this is a little more straighter, more uniform.
Q. You testified that the bar you spoke of was shown on Minnesota's Exhibit 3 I believe plainer than it was shown on Exhibit 1, didn't you?
A. Yes, sir.
Q. You know, don't you, that there were dredgings done and that a good deal of the dredging was done by the suction dredge and the sand thrown over in the old channel, don't you know that that was true?
A. I know there was some sand throwed out on the side there. I don't know where it was from.
Q. Don't you know that a good deal of it was thrown in what is known as the old channel of the river?
A. No, sir.
Q. You don't know, then, whether the soundings that are represented on Exhibit 3 are the soundings on top of the dredgings or the original soundings?
A. I do not.
Q. You never tried to navigate that channel that you marked on Exhibit 3 as H, did you?
A. No, sir.
Q. You never tried to go through there?
A. I know we tried going down that way very often but we couldn't get through.
Q. How many times did you try to go down?
A. I don't remember.

Q. How did it come that you tried to go down through
63 that old channel?

A. I was trying to get down the best way I could get down to navigate the river.
Q. Do you think the soundings are shown correctly on the Mead map?
A. I suppose they are.
Q. Have you looked and don't you know that the Mead map

shows that you can follow a channel there that isn't less than ten feet deep—I mean through the channel that you marked?

Mr. Fryberger: I wish this objection to be entered on the record that the map speaks for itself.

Q. H. on the map.

A. I would say that the red ink has blotted some of the figures and I am unable to say that.

Q. You did find, didn't you, that your channel marked red runs over a seven foot sounding?

A. Yes, sir.

Q. You know that that sandbar wasn't less than seven feet in depth?

A. I know where that's marked seven feet there. There was more water than seven feet in some places.

Q. You mean it had changed after the Mead map?

A. I don't know whether it changed or not.

Q. Do you assume that the soundings on the Mead map are correct?

A. I wouldn't say whether they are or not.

Q. You don't know anything to the contrary?

A. No, sir.

Q. Did you ever use the Mead map?

A. Never saw it before.

Q. Did you ever have any map that showed soundings when you ran the St. Louis River?

A. Yes, sir.

Q. What map was it?

A. I had a Government plat.

Q. When?

A. I have had a number of them of this Lake Superior, of all the lakes.

64 Q. How far back now did you have a Government plat?

A. Well, I don't know how far back.

Q. Well, you have some idea, don't you?

A. No, I have not.

Q. Well, you didn't have any Government plat in '67?

A. No, sir.

Q. Nor in '70?

A. I don't think so.

Q. Nor in '75.

A. Probably not.

Q. What boats did you see navigating—I mean the St. Louis River?

A. I don't remember. I see all the boats that navigated there—wasn't very many of them.

Q. Now you say you tried to get down that old channel that you marked H, several times?

A. I remember of getting around in there trying to go through there.

Q. Why did you try to go through there?

A. I don't know, sir.

Q. If you tried to go through there it was because you knew there was a channel down through there, wasn't it?

A. There was lots of channels around through there and we used to try them too.

Q. You knew that was the deepest channel around there, that one you marked H?

A. I did not.

Q. Don't you know that the Mead map gives it to be the deepest?

A. I see it on the map there.

Q. Have you any doubt that that map showed the correct depth of the channel at the time it was made?

A. I have nothing to say on that. I suppose it is all right.

Q. Now you see, don't you, that that line that you said was marked on the maps that you have identified here, two of the maps, was recognized as State line. You have just now testified that
65 you didn't know of it being recognized as a State line and you don't know, do you?

A. No, I don't.

Q. But you do know that the old channel came through between Rice's and Connors Point close to the Minnesota shore?

A. Yes, goes close.

Q. Were you here when the Northern Pacific bridge was built?

A. Yes, sir, I was.

Q. Was there always two draws in the Northern Pacific bridge?

A. No, only one first.

Q. Which one was it?

A. One to the east.

Q. You mean the one on the Duluth side?

A. Yes, sir.

Q. Minnesota side?

A. Yes, sir.

Q. And you knew that was put there because it represented the old channel, didn't you?

A. Why, yes, I know the channel went up right about where that draw was but didn't go up there very far.

Q. You have seen boats going around that channel that you marked H, haven't you, Mr. Howard?

A. I never saw a boat go around there, no, sir.

Q. How many trips do you say you made up the St. Louis River a year?

A. I don't know. Some years I made more than others. Scarcely a year that I didn't make a number of trips up there.

Q. You testified you went up five or six times?

A. Yes, sir.

Q. Sometimes you went up fewer times?

A. No, I don't think I went up less times than that.

Q. How far up did you *up* usually?

A. Different places. Used to go up to Fond du Lac, up to the
66 La Garde meadow just above the Big Island.

Q. What did you go there for?

A. My father owned that and we used to cut hay there.
Q. What did you go up there in?
A. Went up there with this Lottie Bernard a few times.
Q. Did you take that to go up to your farm—Lottie Bernard?
A. We hauled the hay down with her.
Q. How often?
A. Probably couple of times once each year. Only made hay once a year there.
Q. Was it one of these times you tried to get through that channel you marked H?
A. I couldn't tell you.

Redirect examination.

By Mr. Fryberger:

Gentlemen, I want to ask you if it will be admitted that Minnesota's Exhibit 7 and Minnesota's Exhibit 8 are photographs of a photograph of a map that was made by Lieutenant H. W. Bayfield of the English Navy, from a survey made from 1823 to 1825. Exhibit 7 is an inset from 8, and that the original photograph from which this is taken as a record in the United States Engineer's office in the City of Duluth.

Mr. Gard: You intend to call Mr. Darling?
Mr. Fryberger: We intend to call Mr. Coleman. We will call Mr. Darling.
Mr. Gard: There are changes on this map.
Mr. Fryberger: No changes except this legend.
67 Mr. Gard: There are changes in the soundings.
Mr. Fryberger: As I understand it, you will admit that these are photographs from the photographs of the map that is on file with the United States Engineer in the City of Duluth.
Mr. Gard: Yes, but we don't want to consent to admit it in evidence until the variations are shown.
Mr. Fryberger: We will call the proper officer from the Engineer's office. We state now that this legend on Exhibit 7 was put on by Mr. Darling as it appears, April 22nd, 1904, showing that it is an inset from the other map.
Offer in evidence Minnesota's Exhibit 7 and Minnesota's Exhibit 8, being photographs of maps made by Lieutenant Henry W. Bayfield of the Royal Navy of England, assisted by Mr. Philip Ed Collins, midshipman, between the years 1823 and 1825.
Mr. Owen: We do not object to the reception of Exhibit 7 and 8 in evidence upon the understanding that some one will be called who can explain what is meant by the terms "Variation in 1871."
The Commission: With that understanding the exhibits will be received in evidence.

Q. I want to call your attention to Minnesota's Exhibit 7, Mr. Howard, and to the soundings starting out here in Lake Superior and going through the old Superior entry and running up Superior

Bay going through between Rice's Point and Connors Point, following up the St. Louis Bay and following up what we term here the south channel going to the south of Big Island entirely,
68 showing no channel to the north. Now I will ask you if that shows the channel about as you recollect it as it was before any dredging was done, not calling your attention now to any channel around to the north of Big Island.

Mr. Owen: Objected to as leading.

The Commissioner: It is objectionable as leading. Can't you formulate it a little differently.

Mr. Fryberger: We will take an answer to it just as it is.

A. Yes, sir, them soundings are about on a line as I supposed the channel was.

Q. That is you are not taking into consideration in your answer anything in connection with what has been called here the north channel around Big Island?

A. No.

Mr. Gard: Which map shows the channel as you more nearly remember it, the map that has been introduced as the Bayfield map or the Mead map, Minnesota Exhibit 1?

The Witness: Why, the Mead map shows it more as I remember it.

69 LEONIDAS MERRITT, was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Merritt, you are a resident of the City of Duluth?

A. Yes, sir.

Q. And have been for how long?

A. Pretty near sixty-one years.

Q. And may I inquire how old you are?

A. Seventy-three and past.

Q. Born in 1843?

A. 1844.

Q. You have just been a member of the city commission under the new form of government, commission form of government, have you?

A. First four years, yes, sir.

Q. Were you, Mr. Merritt, in the Civil War?

A. Yes, sir.

Q. Served how long?

A. About three years, not quite.

Q. And you say you have lived in Duluth sixty-one years?

A. Yes, nearly sixty-one.

Q. What year was it that you came here?

A. I came here in 1856.
Q. Your father moved here at that time?
A. He came here in 1855.
Q. So that your family was amongst the earliest settlers at the head of the lakes?
A. Yes.
Q. You had a number of brothers, did you?
70 A. Yes, sir, there was eight of us, eight boys, yes.
Q. How many of them still live in Duluth?
A. Three of us living in Duluth now.
Q. That is N. B., Alfred, and yourself?
A. Yes.
Q. Now right immediately following the Civil War did you sail the lakes for some time?
A. I sailed five seasons.
Q. About what years was that?
A. Well, that would be the five seasons following the Civil War, very near that.
Q. Where did you sail?
A. Well, we had what you call a coaster, trader, fore and aft—trader, sailed all around the lakes.
Q. Did you go down to the other lakes or use that all in Lake Superior?
A. No, just located in Lake Superior.
Q. But you went all over this lake?
A. Yes, pretty much all over it.
Q. You followed that for five years?
A. Yes.
Q. So you were about twelve years old when you came to Duluth?
A. Twelve years old, yes.
Q. And you were along something like 22 or 3 when you commenced sailing?
A. Yes, about 23, I guess.
Q. Where did you live in the earliest days?
A. I lived at Oneota. It is now in Duluth, on St. Louis Bay, on the Bay of St. Louis.
Q. That is the part of the Minnesota shore just easterly of Grassy Point, is it not?
A. Yes, sir.
Q. As shown on these maps?
A. Yes.
Q. And have you lived in that locality ever since, practically?
71 A. Oh, yes, yes, I live there now, always lived there.
Q. And your family lives there?
A. Yes, family lives there too.
Q. And your brother Alfred lived out there until a few years ago?
A. Yes.
Q. Have you been during all of the time since you came here

familiar with the waters from what is called the Superior entry up to Fond du Lac?

A. Yes, we were quite familiar with it, especially when I was young because there was no roads or hardly any trails and we used to go by boats, small boats, canoes, one thing and another, travel around that way, to begin with.

Q. During those years that you sailed did the boats that you used go up these waters?

A. Well, we had no business with our boats above Oneota where I lived.

Q. Did you in other years traverse these waters up above Grassy Point and up to Fond du Lac? A. Why, at the time they were building the old Lake Superior and Mississippi road we were engaged in freighting for the road and its contractors, as far as Fond du Lac from Connors Point and up in through here too.

Q. That is freighting by water you mean?

A. Freighting by water, yes.

Q. What kind of a conveyance did you use—vessel?

A. We had a little sail scow that we used to sail when there was a wind and pole when there wasn't any wind. Worked by the hour and we was young men foolish and we thought we had to work all the time.

Q. And that occurred about what years?

A. Well, let's see.

Q. This freighting for the building of that road?

72 A. I can't recolect. It was the time they was building the St. Paul and Duluth road.

Q. That used to be known as the Lake Superior and Mississippi?

A. Yes.

Q. Was that built about '69 or '70?

A. Yes, I think it was '69; I can't fix dates; I don't remember.

Q. Did you in those days have a pilot's license?

A. How is that?

Q. Did you in those days have a pilot's license or had you at any time?

A. No, I never had a pilot's license. My brother was a pilot. I never had a pilot license but I often piloted steamers.

Q. But you often piloted just the same?

A. Yes, just the same.

Q. Now, calling your attention to this Minnesota's Exhibit 3, and starting about the head of Grassy Point there, I will ask you what the usual course of navigation from there on up towards Fond du Lac was, if you can tell?

A. Well, we used to go—— At the end of Grassy Point there was what we called the Devils Elbow there and there was a channel turned down in there and then there was a kind of a channel across here (indicating). We used to go across something near where this red line is.

Q. The red line you refer to is the red line, A, G, B?

A. Yes. Well, that is the channel we used to take steamboats over whenever I piloted them. Sometimes I did. But our boat

that we navigated almost night and day the summer they were building that road we didn't mind much about the channels; we knew where they were at that time, and the boat was light draft.

We used to always go up this channel with that boat unless
73 we had freight to deliver up in here (indicating).

Q. When you say "this channel," you are pointing to the channel south of Big Island, are you?

A. Yes.

Q. When you went up that channel south of Big Island you say that you took a course something like A, G, B?

A. Yes.

Q. And where from B?

A. We used to go across here (indicating).

Q. You point then on the line B-D and then on up the channel south of the Big Island?

A. Yes, Big Island.

Q. Do you know whether there was still further south than that, and near the Wisconsin shore another channel and if so, can you tell about where it was?

A. Well, there was deeper water here. There was some grass in different places around in this part of the bay and I remember this channel in here, for we didn't have much to do here at this time.

Q. There was a channel in here—you are pointing to a line A-E and around F?

A. Yes, I recognize these channels through there.

Q. But you say you didn't have as much to do——

A. No, very little to do that way.

Q. Is it or is it not true that most of the water traffic in those days and while you were familiar with navigation took the course substantially the same as A, E, G, and B?

A. Oh, yes, they all went up in there, all the old passenger steamers.

Q. That is the south channel?

A. South channel.

Q. And after you got to B your pencil just now pointed to the south channel?

A. Yes, sir.

74 Q. South channel of Big Island?

A. Yes. That is away back in 1857 the steamers that used to run up to Fond du Lac used to take this channel; the old Seneca was one and the side wheel steamer, I forgot the name of it, used to make almost daily trips. They always took this channel.

Q. South of Big Island?

A. South of Big Island. There is no well-defined channel as I understand it, through this bay or that bay (indicating).

Q. This bay you are pointing to the waters just westerly of Grassy Point?

A. Yes, sir.

Q. And by that bay you are pointing to the waters just easterly of Grassy Point?

A. Yes, sir.

Q. And you say in these waters there were no well-defined channels?

A. No well-defined channel. When they ran up this shore there was a bar up there somewhere, I forget just where it was; it wasn't very deep.

Q. Calling your attention to a sort of a light line and a half circle just easterly, line that is marked B here, was there a bar in there just west of what is marked "Coal dock"?

A. There was a bar up there somewhere but I can't locate it now; we didn't used to go around there much.

Q. That was very little used, I take it?

A. Yes; used to be a bar out here. That new channel h[illegible] that off. That is what we call the Devils Elbow.

Q. That is, you are now pointing to the southerly end of Grassy Point?

A. Southwesterly end.

75 Q. You say that used to be called the Devils Elbow?

A. Yes.

Q. And has the land or water of that name moved up the river since?

A. I understand now the boys call this one up here by Big Island the Devils Elbow. They have dredged it out.

Q. Did you at any time have to do with publishing maps of this vicinity?

A. Yes; I published maps for several years and then finally sold out the business.

Q. Were you in those early days engaged in cruising?

A. Yes, I was a cruiser, pine and mineral land.

Q. When did you commence that, sometime after these five years?

A. Oh, yes; shortly after; I can't remember the dates hardly, but I worked at cruising a good many years.

Q. You were at that in the seventies, were you?

A. Yes.

Q. And also in the eighties?

A. Yes, sir.

Q. And did you go to considerable expense with reference to having accurate surveys made for the purpose of publishing your maps?

A. I found in my cruising that often there was offsets in the surveys; that the maps that were made at that time—did not understand—cut them up in squares like a checker-board, so I hired a man in the Auditor's office in St. Paul to work up the field notes of this land district, and published the first correct map that ever was published in this country.

Q. Calling your attention to a paper marked Minnesota's Exhibit 9, I will ask you if that is one of the maps that you published?

A. Yes, that is one of the maps that I published.

Q. This appears to have a date on here 1888. I will ask you whether you had commenced the publication of maps prior

76 to that time?

A. Oh, some three or four years, but I don't remember

the exact date. I dated these maps as they came out as I published them.

Q. Was this map then which you published, was that substantially the same so far as the waters in question were concerned as the earlier maps which you had published?

A. Yes, I think there wasn't any difference made on that.

Q. And was this map generally circulated here at the head of the lakes and in common use?

A. Oh, yes, it was almost the only map that was used, this series of maps, for several years here.

Q. You mentioned a few minutes ago that it was the first accurate map of this vicinity around here that was published, is that true?

A. That's true, because no one else in publishing a map has worked up the field notes, you know, to get the offsets.

Mr. Bailey: I will offer in evidence Minnesota's Exhibit 9.

Mr. Owen: Objected to as incompetent, irrelevant and immaterial.

The Commissioner: Received subject to the objection.

Q. Now this red line that is shown on Exhibit 9 along with this mark St. Louis Bay and Bay of St. Louis and Bay of Superior, what does that represent?

A. That represents what I understood at the time was the State line. That is the old idea ever since I was a boy, that that was the State line there.

Q. Was that the common understanding?

A. Absolutely.

Q. Of the people in this part of the country at the head of the lakes in those days?

Mr. Owen: I object to that as incompetent, irrelevant, im-
77 material, and as being leading.

The Commissioner: He may answer.

A. Well, you know in these old days that I was here there were very few people and I knew them all and they knew me and we know about all these things in our own way and that is my recollection of the boundary as it was understood, generally understood, and I think you ask any old settler here and he will tell you that.

Q. Was that true from the very earliest times?

Mr. Owen: Objected to as leading.

A. That was true from the very earliest times.

Q. Now I see you have marked on here, "St. Louis Bay" which appears to be westerly of Grassy Point, and "Bay of St. Louis" which appears to be easterly of Grassy Point. What is the fact as to what the understanding was about the waters at these locations as to what they were called in the early days by common and general understanding?

A. By general understanding?

Q. General repute.

A. They was called the upper bay and the St. Louis Bay.

Q. The upper bay what you have marked St. Louis Bay?

A. Yes, and to designate them I remember very well when I dictated this map, you know, I named that St. Louis Bay and this Bay of St. Louis too.

Q. Sort of differentiate?

A. Differentiate. My idea was that that bay was formed when this St. Louis and Superior Bay was the open lake. I think anybody that's looked into geology and formation of these points would agree that Grassy Point was first formed, because the lake gravel is there at the base and the sand out at the end, but it didn't
78 raise above the water by the action of the sea and current as high as it did at Rice's Point and Connors Point. Rice's Point is exactly the same formation. It was gravel at the base and sand out at the end and Wisconsin Point is all sand from the drift of the south shore and these were formed from the drifts of the north shore. Minnesota Point is the same exactly, gravel resting out here (indicating), so that these points must have been formed one after another and that's what we call St. Louis Bay in the old times, was the only bay that was here; or perhaps originally this was an estuary, a sort of a widening of the mouth of the river.

Q. That is both St. Louis Bay and Superior Bay you were pointing to?

A. This was an estuary. You see it up as far as New Duluth. There is lake gravel there. I seen when we were excavating there for sewers, you know, the lake formation there, so that the sea or lake must have beat in against that point.

Q. That is at New Duluth?

A. New Duluth, yes, sir. And then afterwards this Rice's Point made a bar there and that became a bay and then St. Louis Bay was next. The formation of Rice's Point and Connors Point, and then the Bay of Superior, as they call it, was next.

Q. Do you know whether it is the common understanding or have you any information as to whether there is probably a bar forming even outside of what is known as Minnesota Point and Wisconsin Point?

A. Yes, I have heard that talked of and I presume that they was forming there. Wherever the debris or the silt comes down
79 the river, and the current is strong enough to carry it out into the lake. It will only go a little ways out. It will settle when it meets the dead water of the lake and it will form a point. That is the way all these points are formed.

Q. Have you made a study to some considerable extent of the mouths of rivers and the heads of lakes and the formation where the waters of rivers enter lakes?

A. Yes, I have. I didn't know that I would ever want to use it, but it is for my own convenience in voyaging in the north lakes, particularly canoe voyaging. I have seen these points and saw the cause of them, saw where the wind would wash the gravel up and meet some point of obstruction and then work out like Minnesota

Point. There is one in Pile Lake that I was looking at the other day that formed out there and will cut that lake in two, and it was formed just the same as these were, but probably take more time to do it.

Q. You have a summer home on Pike Lake?

A. Yes, sir.

Q. And have had for several years?

A. For thirty years.

Q. And have watched the formation?

A. Yes, I have seen that point built out, measured it.

Q. From your knowledge of these waters above what is called the Superior entry and up to we will say the westerly part of Big Island or westerly end of Big Island, what in your opinion are those waters, are they an arm of the lake or are they a river?

A. They are certainly not a river.

Mr. Owen: Objected to as incompetent, irrelevant and immaterial; on the further ground that the witness isn't competent
80 to testify.

The Commissioner: Go ahead and testify.

A. It is very easy to tell an estuary or bay or lake because—well, geography teaches us that those are, and your own experience too. A bay, of course, is an arm of the lake in a way and these are certainly the arm of a lake. They have no defined channel. They are flattened out. Now the river commences at the west of the island there, as I have got it on this map "The Island." The river commences right up there at that cut-off. All that island is in the bay—St. Louis Bay. Water divides and runs around the island.

Q. If I understand, your idea is that the mouth of the river is at the westerly or southwesterly end of the island, the "Big Island" as it is sometimes known?

A. Yes, that is the mouth of the river.

Q. And from there on down it is the bay or mouth of the lake?

A. Yes.

Q. What have you to say, Mr. Merritt, as to whether the bottom of these waters in question, that is, from down at the point you have mentioned as the mouth of the river, on down to Grassy Point, whether that bottom is of a shifting character so that the soundings taken one year would not necessarily give the depths at those same places a few years different, either way?

A. Well, of course, there was a time that they were cutting timber up at Cloquet and they didn't have burners there and they let the drift come down. I was on the river some and I noticed that there was a good deal of chips and sawdust and one thing
81 and another that would be swept down the river into the bay and settle. I don't know to what height or depth that would change the river at all, because I never made any surveys, but I know there was rice fields that it covered with these chips and sawdust.

Q. What part of the bay was it that this settling would occur?

A. It would occur shortly after it came out into the bay there.

Q. That is shortly after passing the westerly or southwesterly part of Big Island?

A. Yes, sir.

Q. And settle from there on down to Grassy Point; is that what you mean?

A. Yes.

Q. Would it be true that the ordinary portions of the river would act in the same way except perhaps not so rapidly?

A. Well, especially since it cut through this channel at Duluth. Now, originally, of course, the channel ran out here at Superior, what we call the Superior entry now. Then the bay would get very much higher than the lake sometimes and there would be a pretty strong current down there down through these bays while the bay was emptying the superabundance of water, but there isn't so much of that now.

Q. Not so much as before the cutting through, you mean?

A. Yes, the two openings there clear the water of the bays.

Q. So that there is not as much of that now as there was before the canal was cut through?

A. No. I recollect when they was cutting this canal through there I was down there and someone had dug a trench from the end of the canal, and there was a river running down across as though it was a small river. I stepped across and back. The bay was
82 then two or three feet higher, as much as two feet, perhaps three feet, higher than the lake. There was high water at the time and they had dredged through the sand bar, you know, and someone had cut a little channel with a spade and the next morning that had all cleared out with the current; so that the bay lowers quicker now than it used to.

Q. Before the canal was cut through there on the Minnesota side near Duluth what is the fact as to whether there were tides, so-called, that went up through these waters in question, and if so give us some idea of how far they went up?

A. They would back the water as far as above Fond du Lac. The current would run up there often, I found, in small boats, and the current would run up there, a tide of six inches. Unless there was a rush of water the three inches would back it up to Fond du Lac.

Q. A tide of three inches will back up to Fond du Lac?

A. Yes.

Q. What is the fact as to whether, except in cases of very high water like spring freshets, as to the level of the water at Fond du Lac and the level of the water out in the main body of the lake?

A. I think under ordinary circumstances they are very nearly the same. I don't think there is very much—over two or three inches difference. I have heard, but I don't remember exactly.

Q. What is the fact with reference to logs that might be floating into these waters, these bays, as to whether they would float both ways or would they only float one way?

83 A. Well, if the current happened to be up from any cause, from northeast wind, would raise the water in this end of the lake by considerable some times. Then they would float up stream.

Q. How far have you known of them to be carried up to any point?

A. I don't know as to that. I logged up at Spirit Lake one winter and poled logs down and got them in town here, I think. Got them in to an old mill that is down here by Patrick's place.

Q. That is right near the main part of the City of Duluth now?

A. Yes, sir. And they would float up to Fond du Lac if they had time. Of course, the usual current is down until you get to Big Island.

Q. Until you get to Big Island?

A. Yes, to "The Island."

Q. Now calling your attention again to this Minnesota's Exhibit 3 I will ask you whether in what you call lower St. Louis Bay and which is marked on that map "Bay of St. Louis" whether there are any well-defined, or whether there ever have been any well-defined channels in that body of water?

A. Not clear through the body of water. I will tell you. When you get down here (indicating), the old channel turned, of course, hugged this shore, and here was a point—trend of the shore always directs the channel. Of course there would be a current down here sometimes one way and sometimes another, but usually down.

Q. You are pointing now about to the end of Grassy Point?

A. Grassy Point. And that channel ran down quite a piece as it shows on Mead's map, almost to Oneota here. And then there was no channel there again. It spread out. And here was

84 a channel at Rice's Point.

Q. Do I understand you that there might be some little current or channel just easterly of Grassy Point and another current or channel for a short distance westerly of Rice's Point, but that in between there was a body of water in which there was no channel or current?

A. Spread out. No well-defined channel, no, sir.

Q. Was the water on the Wisconsin side of the body of water as deep as on the Minnesota side?

A. Yes, about the same across there. There was a point down there by Howard's Pocket. There wasn't any well-defined channel there, but the water was about the same depth, eight or nine feet.

Q. As a matter of fact, I think if I am not mistaken Mead's map shows a little deeper on the Wisconsin side?

A. Of course, there wasn't much difference as I remember it.

Q. Apparently in through here (indicating on the map) near the Wisconsin side, there was a depth a trifle greater than on the Minnesota side, was there not?

A. I think there was, but it wouldn't be over a foot difference, nothing noticeable.

Q. Calling your attention to map which has been marked Minnesota's Exhibit 10, I will ask you if that is one of your maps?

A. Why, it is a copy——

Q. No, I mean if the particular paper belongs to you, if you produced it here in court?

A. Oh, yes, it's my map, yes.

Q. How long have you had it, if you know?

A. No, I don't remember, but I presume I bought it when it was first published.

Q. Did you just find that amongst your papers today on
85 request that you look through them and see what you could find in the way of maps?

A. Yes.

Q. I see this is marked "Published by Lewis & McNair" and "copyrighted 1888 by Ray T. Lewis."

A. Yes, sir.

Q. Who was Ray T. Lewis?

A. I think he was mayor one time.

Q. Wasn't he also called Captain Lewis?

A. Yes.

Q. Wasn't he a sea captain?

A. Was he a sea captain? I don't know.

Q. He was for some years mayor of Duluth, was he not?

A. Oh, yes.

Q. He has been dead for several years, has he?

A. Yes.

Q. And was this map in common circulation and well known in the times in which it was published?

A. Yes.

Q. I see it is marked here drawn by "J. J. Durage, Civil Engineer."

A. Yes, I remember. I allowed him to copy my map. He is now dead.

Q. Was he a man of some unusual accuracy so far as engineering is concerned?

A. Yes, he was a great engineer. I saw him when he was making this map. I was in his office. I remember well about it now. I had mine copyrighted but I told him it was all right.

Mr. Bailey: Offer Minnesota's Exhibit 10 in evidence.

Mr. Owen: Objected to as incompetent, irrelevant, immaterial.

The Commissioner: Received subject to the objection.

Q. Do you know, Mr. Merritt, what was the first atlas published in the City of Duluth, whether Roe's atlas was or not?

A. I had one it seems to me that was like that.

86 Q. Do you know whether Roe's atlas was——

A. No, I don't.

Q. Do you know that was one of the early ones at least?

A. Yes, I remember buying it long ago.

Q. Do you know whether that was in common use at the head of the lakes?

A. Yes, it's used around here.

Q. What?

A. Yes, it was in common use in the office, I know.

Q. Calling your attention to Roe's atlas page 126, I will ask you if the map there is a part of Roe's atlas which was in common use from 1890 and thereabouts, at the head of the lakes?

A. Yes, about that time I bought the atlas.

Mr. Bailey: Offer book Exhibit 11 in evidence.

Mr. Owen: Objected to as incompetent, irrevelant, and immaterial.

The Commissioner: Received subject to the objection.

Q. Mr. Merritt, have you during your life paid a good deal of attention to iron mining, iron ore deposits and geology in connection with that, and with the formation of the surface of the earth generally?

A. I have made as much study as I could for the last twenty years, twenty-five or thirty years.

Q. So as to get it into the record, just tell us in a general way what you have done along those lines, what experience you have had and what study you have made. I don't mean by that to go into detailed history any longer than you want to.

(Ten minutes recess.)

Q. (Question repeated by Reporter):

A. When we first came on Lake Superior, as a boy, there were many miners up here and I used to hear them talk and I got interested in it, and so from the time I was a boy, I was twelve
87 years old, and so I kind of made a study whenever I could, of the theory of formations and finally evolved the theory that all mineral was water formed, sea water formed; that when the sea was up at different levels and ran against the ice, the ice formation, that there it would deposit whatever mineral there was in it, and worked on that theory, specially on the Mesaba Range, and there we evolved what they call the trough theory. Now we called it the basin theory. Ten years afterwards it was promulgated by Van Hise of the Wisconsin University, and we located the whole Mesaba Range on that theory of a water formation and what we called the basin formation which Van Hise named trough theory. Trough is better because our first idea was that they was nearly circular like a basin and of course after we mined this out, mined into them, they appeared to be more the shape of troughs. Since then I have worked on that theory in Old Mexico and been successful in finding ore. Also New Mexico and Idaho. I didn't succeed in making any money there yet but I found the ore just the same.

Q. About what time was it you evolved that theory, you say it was some ten years before President Van Hise?

A. It would be in 1892 we evolved that basin theory as we called it.

Q. Did you locate a considerable number of mines on the Mesaba Range on the strength of that theory?

A. Yes, we located all the way from Mibbing east to Embarrass Lake.

Q. And applying that theory were you practically always successful in putting down drill holes?

A. Yes, sir, we never made a mistake.

Q. Always found the ore when you followed that theory?

88 A. Always found the ore.

Q. Did you have to do with the building of the Duluth, Missabe & Northern, which was the first ore road?

A. Yes, sir, I was one of the syndicate of five that built it. My brother and Donald Grant and one or two others, I can't recall their names; there was five of us.

Q. Was that the first railroad that connected Lake Superior with the iron mines on the Mesaba Range?

A. Yes, the first one.

Q. That was built about when?

A. That was built in '92.

Q. '92 and '93?

A. '92 and '93, yes. We shipped ore over it in '93, I think.

Q. You spoke a time or two in your testimony about making examinations at these points along there like Grassy Point and Rice's Point and Minnesota and Wisconsin Points. Have you given a good deal of attention to the study of the formation there in the same way?

A. Yes, not only there but also in hunting for mineral we found that wherever there was what we called a boulevard pitch—the original ocean shore—that wherever there was a point, hook, as you might call it, running from the south—bending in towards the southwest, there we were liable to find mineral. Our idea was that where that hook was formed there was an eddy and that gave a better chance for the mineral deposit in these troughs, and these points were formed probably something like those were, about the same principle.

Q. As I understand, your idea is, then, that so-called bars, or the first bar there formed up—the first bar we now find in these waters, was formed up near the mouth of the St. Louis River?

89 A. Yes. First one above the mouth of what the St. Louis River is now, above Spirit Lake. The first bar was formed there and the river worked around in the clay on the south shore between that bar and Spirit Lake. Spirit Lake was the first bay, I think, that was formed.

Q. And then that they were gradually formed from there on down?

A. Yes, sir, one after the other.

Q. So that the last one that now appears above the surface is what is known as Minnesota Point and Wisconsin Point?

A. Yes.

Q. And you think there is one forming still further out in the lake now, although it hasn't appeared above the surface?

A. I have that theory but I haven't looked up soundings for it.

Q. Just give us a little idea in your own language as to why you think these waters in question up to the westerly end of the big island are an arm of the lake or part of the lake rather than a

river. Perhaps you can do it by telling us what you understand to be a river or know is a river and what you know is a lake.

A. In the first place if my theory is correct at all about the formation of these points, that was a narrowing of the lake and might have been an estuary, what is called an estuary, probably was, and then when the current of the river came down and met the sea, met the wave, you know, or the dead water, there it formed a bar and these bars were formed successively and left them as bays. They are certainly not a river.

Q. What I mean is, you spoke of an arm of the lake or bay. What are the characteristics of them as distinguished from
90 a river, not in this particularly, but what in your mind is the characteristic of the bay as distinguished from a river?

A. Well, a bay is a body of water nearly surrounded by land and a river is one that has a continuous current and narrowed down to the proper width of a river, and whatever the volume of the water requires, and has its trends or shores—like a river.

Q. Up by Fond du Lac and above that do you find well-defined banks of the St. Louis?

A. River?

Q. Yes, above Fond du Lac?

A. Oh, yes.

Q. Without any substantial indentations?

A. Yes, all the way.

Q. And below, from Big Island down, are there a large number of indentations of the shore and of very considerable size?

A. Yes, islands and bars.

Q. What I mean by that, you find Pokegama Bay and Little Pokegama Bay, Howard's Pocket, and Kimball Bay, a considerable number of bays on the Wisconsin side, do you not?

A. Yes, Big Pokegama and Little Pokegama and on this side there were a few small bays.

Q. And on the north side there were likewise indentations but not of as large area?

A. Yes.

Q. Calling your attention to Minnesota's Exhibit 12 I will ask you if that is one of the maps that you published and which appears to have been copyrighted in 1889?

A. Yes, that was one that was published on a larger scale than the other, covered less territory.

Q. And that also shows the State boundary between Minnesota and Wisconsin, does it?

A. Yes.

Q. Same as the other?

A. Yes.

91 Q. But on this the Wisconsin land and water are shown in blue, are they, and the Minnesota land and waters in yellow?

A. Yes.

Q. You said that you commenced publishing maps probably about 1884?

A. Somewheres along there, 1883 or 1884.

Q. And were those maps that you published gotten out from year to year right along up to the time you sold out?

A. Yes.

Q. Do you remember about when it was that you sold out your map business?

A. I sold out the map business in about '92. I published up till '92.

Q. I notice that this map Exhibit 12 shows the dock line on the Minnesota side as well as the dock line on the Wisconsin side?

A. Yes.

Q. At least indications of it for a certain distance and probably showed it as it was at that time, did it?

A. Yes, these dock lines were established by the Government, I think, and we took them from that.

Mr. Bailey: I offer Exhibit 12 in evidence.

Mr. Owen: Objected to as incompetent, irrelevant and immaterial.

Q. You see these red lines that is marked "State line" goes up not only through these waters up to the western boundary of Wisconsin but you carry the red line down showing the State boundary of Wisconsin on the west, between that state and Minnesota?

A. Yes.

Q. And where this perpendicular red line on this map marked "State boundary"—where that hits the river that is the falls above the Indian village at that point?

A. Yes. It started at the foot of the first big fall. Quite rapid, the river up there for a piece. George Stuntz told me he
92 moved up the river as far as he could get with a canoe up there when the line was run between there so as to get as much as he could in Wisconsin.

Q. Who is George Stuntz?

A. He is an old settler.

The Commissioner: Stuntz is dead?

The Witness: Yes.

The Commissioner: Go ahead and tell what he said to you.

Mr. Owen: We object to it as hearsay.

The Witness: He said—he told me he was living in Wisconsin and he went up the river as far as he could with a canoe before he started that line down.

The Commissioner: Was he the man that made the Government surveys here in Wisconsin and Minnesota here at this point?

The Witness: Yes, a good many of them.

By Mr. Bailey:

Q. He was a surveyor and engineer?

A. Yes, sir.

Q. And came to the head of the lakes along about 1854 or earlier?

A. '54, I think; I am not quite certain. He first located down at Iron River on the south shore, and then he finally moved up to

Minnesota Point, end of Minnesota Point, and lived there a long time.

Q. And you say he lived in Superior—or Wisconsin?

A. Yes, when he made that survey he was living in Wisconsin.

Q. And that was the occasion, he said, for getting as much in Wisconsin as he could?

A. Yes, that's what I understood him to say.

Q. Mr. Stuntz's name was George R. Stuntz, wasn't it?

93 A. George R. Stuntz.

Q. He died about four years ago?

A. Longer ago than that; five or six years ago.

Q. Was he a man that was commonly referred to as to any old surveys here up until the time of his death?

A. I think he was quite authority.

Q. Testified in a great many cases, did he not, with reference to old surveys?

A. Yes.

Q. And practically surveyed this whole country around the head of the lakes, didn't he?

A. Well, he surveyed considerable over in Wisconsin and he surveyed a great deal of country north towards the boundary.

Q. That is north in Minnesota?

A. Yes, north in Minnesota.

Q. And did quite a bit right here in the City of Duluth and on Minnesota Point?

A. Yes, he did considerable work in the City of Duluth local surveying and laying out town lots and additions. This survey was made here in the winter of '56 and '7 by Eppler & Martin, all this country along the lakeshore here.

Q. You spoke about Mr. Stuntz running his boat up the river as far as he could. Did he make the survey of the west Wisconsin line?

A. Yes, line between Minnesota and Wisconsin.

The Commissioner: Is there any remnants left, any marks of the Indian village mentioned in Nicollet's map, in Fond du Lac?

The Witness: Oh yes, there is—let me see. There was an old warehouse there that has been moved lately. Yes, I recognize the place up there the same as I did——

Q. Isn't it true, Mr. Merritt, that there is right today a
94 foundation of that old trading-post there at Fond du Lac? Is that the Indian village?

A. Oh, yes, that is the old Indian village.

Q. Isn't there stone foundation about sixty feet by thirty in size, right there now?

A. There wasn't any stone foundation to that old building.

Q. Perhaps I am talking about another building?

A. Yes; you are talking about another building which they call that but that was a later building; that was a brownstone building. The old warehouse was just as you get off of that first dock on the

lefthand side there and there's the foundation mark there yet. I saw them there last summer.

Q. You say get off at the dock on the left-hand side?

A. Left-hand side of the street.

Q. Left-hand side of the street as you get off on the Minnesota side?

A. Yes.

Q. That dock is now used by Clow & Nicholson?

A. No.

Q. It is at the foot of the street, main street?

A. Yes, towards Mission Creek.

The Commissioner: Then this is substantially true, that the Indian village site was about where Fond du Lac now is?

The Witness: Absolutely right exactly there, yes. It was there when we came, in a primitive state about as it was.

Q. Just as a matter of curiosity, what did it consist of, was it built up in any permanent way or just a lot of tepees?

A. Log cabins mostly and wigwams and so on. There was a very pretty valley there before the old Lake Superior and Missis-
95 sippi grade cut off the point, where they had their burying grounds, shut off the view up the river to Mission Creek. Doesn't look as nice as it used to.

Q. Calling your attention to Exhibit 13 appearing to be a map of the head of Lake Superior, sectional map of the country around the head of Lake Superior, showing the cities of Superior and Duluth, 1876, published by James Bardon of Superior, Wisconsin, I will ask you if that map was in common circulation and commonly referred to at the head of the lakes in the early days along about the date when it appears to have been published?

A. I recollect the map very well.

Q. Do you know who James Bardon was?

A. Yes, knew him since he was a boy.

Q. To get it into the record, who is he?

A. James Bardon?

Q. Yes.

A. He used to be the big man of Superior; I guess he is yet. I knew him when he was a boy.

Q. He was there in the very early days of Superior, was he?

A. Yes. I recollect him. oh, away back in the '60's or '50's, I guess; I recollect him away back.

Q. You say he was the big man of Superior in those days?

A. Yes. Well, he has been since.

Q. Do you know whether he published a paper in those days?

A. Yes, he published a paper a good many years quite a number of years, I don't know how long.

Q. Do you know whether he owned a very large amount of land in Superior and vicinity?

A. Oh, yes, I know about that.

Q. Was this map in common circulation and commonly
96 referred to in those days?

A. Yes, I recollect that map.

Mr. Bailey: We will offer it in evidence.

Mr. Owen: Objected to as incompetent, irrelevant and immaterial.

The Commissioner: It will be received subject to the objection.

Q. Just calling your attention to this old Bayfield map which has been marked Exhibit 7, I will ask you if you in the early days often heard that map referred to?

A. Why, before Mead made his survey this was the only chart they had of the lake and I often heard it mentioned but I never saw one, never happened to see one.

Q. Do you know whether, before Mead's map as you say, this map was the map in common use amongst navigators?

A. Oh, yes, I knew that by my acquaintance with the sailors, you know.

Q. You were acquainted with the sailors even before you were a sailor yourself?

A. Yes, sir; oh, yes.

Q. Was this line of soundings that appear on this Exhibit 7—is that indicated substantially about where you have always understood the State line to be?

Mr. Owen: Objected to as leading.

Q. Or does it not?

A. Yes, sir, I understood the State line to come out more in the middle of this lower bay here. More like it is on my map; that is the way I understood it there.

Q. Of course this is drawn on rather a small scale and doesn't pretend to be exact as far as line is concerned. In fact, I think you testified that the soundings in St. Louis Bay or the depth there was just about the same clear across?

A. Yes, sir.

97 Cross-examination.

By Mr. Hudson:

Q. As a matter of fact, you didn't know just where the State line was at that time, did you?

A. Except by common understanding. We all understood it was there. We don't know where it is yet. You are disputing about it yet.

Q. There has been no controversy about the State line until in recent years?

A. There wasn't at that time, no.

Q. That is, until within ten or twelve years, probably, when the first controversy came up about the State line?

A. Well, I don't recollect how long it has been because I wasn't interested in any way particularly.

Q. Was there any controversy that came up about the State line prior to the action that was brought by Norton against Whitesides a few years ago?

A. No, I don't think there was.
Q. That was about the first controversy?
A. That was about the first.
Q. That came up about the State line. Of course, in preparing these maps, your map and Mr. Bardon's map and other maps, the dotted line that is marked "State line" was simply placed at that point without any reference to the fact as to where the State line was, but as showing that it was somewhere between the main shore on the Wisconsin side——.
A. Yes.
Q. —— and the main shore on the Minnesota side, wasn't that?
A. Yes. My recollection is that we considered the bays as a portion of the lake and so made the line dividing the waters cen-
98 trally until we came to the river at the Big Island. We had a clear idea, I think, that these bays were a portion of the lake and that we made the division there according to that.
Q. Everybody didn't have that idea that the foot of the river was at that point that you now put it, did they?
A. That was the general—we always thought that. I tell you I knew everybody in this country at one time.
Q. Mr. Barton's map, for instance, shows it between Minnesota Point and Wisconsin Point, doesn't it?
A. The mouth of the river?
Q. Yes.
A. Between Minnesota Point and Wisconsin Point. That would be the mouth of the river; the mouth of the St. Lawrence River practically is the mouth of the St. Louis River if I understand geography.
Q. That is the mouth of the St. Louis River is the mouth of the St. Lawrence River?
A. Yes, that is where the St. Lawrence River finally empties into the ocean. They give them these different names like Niagara River, Detroit River and Sault Ste. Marie, but it is really Kitchi Gammi Zebee the estuary clear to the mouth of St. Lawrence, the mouth of the St. Lawrence River, and you will find it in geography, scientific geography. You give the length of the St. Louis River you go from seven Beaver Lake to the mouth of the St. Lawrence.
Q. Then the portions between the mouth and the source of the river and the parts of the river are not necessarily continuous?
A. No; you take for instance up here the Embarrass
99 River that heads north of the Mesaba Range, it runs through the Embarrass Lakes and empties into the St. Louis. It is the Embarrass River before it strikes the lake. It is the Embarrass River when it strikes the St. Louis, and the mouth is in the St. Louis, and that would have been the St. Louis River, only where they join the St. Louis River was the largest, carried the most water. Goes through four, five lakes, Embarrass Lakes.
Q. If your theory is correct, then would not St. Louis River be the mouth of Embarrass River? Why doesn't the river that is at the source of the watershed carry the same name to the final outlet in the ocean?

A. It is governed by the larger stream. The Embarrass is a branch of the St. Louis. It is a smaller river than the St. Louis.

Q. As I understood you to testify a moment ago you said the mouth of the St. Louis River was the mouth of the St. Lawrence River?

A. Scientific geography will give you the length of the St. Lawrence River clear up to seven Beaver Lakes. There is different names; that's all; but that is the largest river that empties into the lake, the St. Louis.

Q. The St. Lawrence River is larger than the St. Louis?

A. Certainly. All rivers the further they run the larger they are.

Q. Then it wouldn't be true, then, that that would be the mouth of the St. Louis River, if that is the largest river?

A. Why not? It isn't a branch of the St. Lawrence; it is the head of the St. Lawrence.

Q. So Embarrass River is the head of St. Louis River?

100 A. It is not, because it empties into the St. Louis River and is a branch of the St. Louis River. St. Louis River isn't the branch of the St. Lawrence. It is the St. Lawrence River—same river.

Q. You testified that you had lived here since 1844, was it?

A. No; 1856.

Q. How old were you then?

A. Twelve years old.

Q. And you have been familiar with the formation of St. Louis River and St. Louis Bay and the Bay of Superior and of the lands-points, since that time, haven't you?

A. Yes.

Q. In 1856 Connors Point was in existence, was it not?

A. Yes.

Q. Substantially as it is today?

A. Yes.

Q. Rice's Point was in existence?

A. Yes.

Q. Substantially as it is today?

A. Yes.

Q. Grassy Point was in existence?

A. Yes.

Q. Substantially as it is at this time?

A. Yes.

Q. Minnesota Point was in existence?

A. Yes.

Q. And the Wisconsin Point was in existence?

A. Yes.

Q. The entrance or the outlet of this watershed that comes down the St. Louis River, St. Louis Bay, and Superior Bay, was between Minnesota Point and Wisconsin Point?

A. Yes.

Q. At that time. That was the only outlet?

A. Yes.

Q. That, so far as outlet at that point is concerned, it isn't very

different now except what has been made by the Government improvement, than it was in 1856, was it?

A. Oh, it's about the same place. It used to move around considerably and there would become a flood and cut off Minne-
101 sota Point.

Q. But so far as the width of the points and the height of the points, they are substantially at this time like they were in 1856?

A. Except Rice's Point was a good deal higher. That has been all cut and leveled down. Minnesota Point, of course, is changing all the time, sand from the lake there, it is quite different now than it was when I first knew it, as far as surface is concerned.

Q. But this Rice's Point has been changed artificially?

A. Yes, sir.

Q. There has been more of a change on Minnesota Point and Wisconsin Point by the action of the waters than of Rice's Point?

A. How do you mean, at the ends?

Q. Yes; at the ends of the points at the entry?

A. Oh, well, when there was a rush of water it was liable to cut off these points and then they would form again, you know.

Q. Then these changes of bars, formation of bars in this watershed as the water flows down the St. Louis River have been changes that have taken a very long time to make—for instance, to form the bar like Rice's Point?

A. Oh, yes.

Q. Perhaps a hundred and fifty years?

A. May be longer than that.

Q. You would think longer than that, wouldn't you?

A. Yes; it's according to how much water and debris there was running down the St. Louis at the time they formed, you know—silt. If there was heavy water there they would form more
102 quickly and if it was as it is now they would form more slowly. There was more water in the St. Louis sixty years ago on an average than there is now.

Q. And seventy-five years ago or in 1848 there was perhaps more than there was sixty years ago, or about the same?

A. Probably about the same then because it was all——

Q. Wouldn't you think, from your study and experience, your study of geology and the formation of these points, that these points, Wisconsin Point and Minnesota Point and Rice's Point and Connors Point and Grassy Point were substantially the same in 1848, that was about twelve years prior to the time that you became familiar with them, that they were substantially the same as they are at this time?

A. Oh, of course—of course they were.

Q. Then if this condition that you describe as characteristic of the bay or the lake at some time existed with reference to these waters, it was more pronounced back a hundred and fifty years ago than it was at this time; is that your theory?

A. More pronounced?

Q. The characteristics of the waters as bays or lakes?

A. Of these waters, St. Louis?

Q. Yes.

A. I don't know as I get you exactly. You don't want to try to catch me, you know.

Q. I wouldn't do that for the world, Mr. Merritt; you know that. I want to know if the particular characteristics of these waters, we will say a hundred and fifty years ago, we will draw on our imagination, were any more like a lake then than they are at this time?

A. Well, really, that's a fact in this way: now the upper
103 St. Louis Bay or what I marked on my map as St. Louis Bay up there between Grassy Point and the Big Island has in the last a hundred and fifty years filled up and formed the bars and will continue to do so unless they are dredged out, more so than the lower part of the bay because that Grassy Point bar was thrown up there and the debris settled in that upper bay. That was deep water one time up in there, you know, and it has been filled up by silt that came down the river.

Q. That is low places where there is——

A. Where there is shallow water. Was all deep at one time, say a hundred and fifty years ago; probably it was very deep water up there, all of these waters.

Q. And the silt that flowed down the river——

A. That reached the dead water. That is the sign of a bay instead of a river. That is the reason you can prove that it is a bay is because the silt will settle where it meets the dead water.

Q. Mr. Merritt, I call your attention to Minnesota's Exhibit number 1.

A. That is the old Mead map. I was here when they made that, when they surveyed it.

Q. And call your attention to the point, we will start in immediately east of Grassy Point?

A. Yes.

Q. There appears to me near the center between Grassy Point and Wisconsin a light-colored strip upon which soundings are marked?

A. Yes.

Q. These soundings are twenty-one, twenty-nine, thirty, twenty-seven, thirty-six feet, and so forth, and after getting past
104 Grassy Point we have soundings of twenty-six, twenty-four, twenty-two, *twenty-two,* twenty-one, and twenty feet. That carrying up west in a westerly direction along that same channel is the line of figures of soundings?

A. Yes.

Q. Up past an island that is marked—this was old Tollis Island but it is marked on Exhibit 3 as K—but to the north of that island seems to be the soundings of the river or a channel, don't they?

A. Yes.

Q. Then it runs in a southerly direction or southwesterly direction approaching nearly to the island, bearing westerly in a continuous channel, apparently, from these soundings that are west of a point that is marked on Minnesota's Exhibit 3 as "L. sand-bar" and

that is continued up in a northeasterly direction then until it strikes the southerly end of the island?

A. Yes.

Q. What do you call that channel that I have outlined?

A. I would call that the deepest water through the bay there.

Q. That is the deepest water through the bay?

A. Yes.

Q. That is the deepest water, then, from a point immediately south of Grassy Point up to the southerly line of the island, isn't it?

A. Deepest water in the bay seems to be, from that map.

Q. Carrying this on by the island we have it continuous showing soundings all the way up Fond du Lac?

A. Yes.

Q. Now, how was that formed; have you any idea of how that was formed?

A. I certainly have.

Q. I would like to hear you explain it?

A. Why this river came down kind of bank gravel probably or something. There's an island, ain't it (indicating)? Then it took off just as channels always do,—it took its trend off where
105 it butted against this and struck something else here (indicating). The trend of the shore governs the channel of the stream wherever there is any current. For instance a stream naturally takes the belly, as we call it, of the shore where the shore trends in; then the channel will follow that until it strikes some obstruction or comes to some point and then it will cross over exactly as this bend indicates. If that bend is sharp it will cross sharp. If it is more slanting down river it will cross until it strikes something else and then it will come back. Wherever there is any current the trend of the shore always regulates the deepest water and throws that current to the point that has made the deepest water?

A. Yes.

Q. Then it is the scouring, then, of this point that you name as the channel of the waters flowing in that point that formed the deepest water, isn't it?

A. Yes, that's it; you can discover it right here, for instance, on Grassy Point there is a channel down a piece in the bay there and then it spreads out, you know and doesn't cut this channel.

Q. That is the Bay of St. Louis that is east of Grassy Point?

A. Yes; Bay of St. Louis, and the same way up here (indicating) when the volume of water strikes right at the point it makes deep water down there and finally follows down—There could be a channel wherever there is a current, you know. No one can deny that there isn't a current in these bays, because if the water rises two feet in the lake, from the northeaster or from any cause, it will
106 back that water up to Fond du Lac and it will make a current going up or when the lake recedes, of course, the current will come down here. There is no well-defined channel through those bays except up in here (indicating).

Mr. Fryberger: That's above Big Island you have pointed.

Q. Here is eighteen feet, twenty-five feet, twenty-three——

A. There is a bar down there (indicating).

Q. There is a bar there at that point at point C. Then I understand you to say, Mr. Merritt, that this channel that we have followed commencing at Fond du Lac and which you say the course of it has been directed by the shape of the shore points——

A. Yes, by the trend of the shore.

Q. By the trend of the shore has been formed by the current of water flowing down through these points, is that right?

A. Yes.

Q. And that the main channel that starts in here at Fond du Lac strikes Big Island on the south?

A. Yes, that's what I consider the end of the river.

Q. What you consider the end of the river?

A. Yes. Here it runs out both sides.

Q. But it is shown on Mead's map here by the soundings to continue in a southwesterly direction?

A. The channel continues but the river—it's in a bay there. There can be a channel in the bay. You don't deny this is a bay, do you, Superior Bay?

Q. I am not testifying. I am trying to find out what you will say about it. Get Exhibit 3. I want to show him that.

107 A. That's a dredged channel.

Q. From the south end of the Big Island here running in a southwesterly direction over near the Minnesota shore between the Minnesota shore and the sand island with the letter "L" in it——

A. Yes.

Q. Between the Minnesota shore and that island is a channel?

A. Yes. I can see that on the map.

Q. Then that channel flows in an easterly direction from the most northerly point of sand island in an easterly direction almost to the easterly line of Big Island, doesn't it?

A. Here is the old channel there (indicating).

Q. Yes; and this would be the easterly line of the Big Island. Then it runs in a northeasterly direction to the island that is marked "K" on Minesota's Exhibit 3?

A. That's a made island.

Q. Yes; there is a little island there?

A. Bar. I remember it.

Q. Then it shows due north of that island at K, quite close to the Minnesota shore, then flows in an easterly direction along the shore of this made island with a K on it, to a junction where number twenty-three in the artificial channel is marked on the map?

A. Yes.

Q. That is on Minnesota's Exhibit 3. Then it crosses the artificial channel at twenty-three between twenty-three and twenty-five shown—that is the sounding twenty-three and sounding twenty-five—shown on this Exhibit 3, following closely along the line of the natural channel to a point at C marked on Plaintiff's map Ex-

hibit 3, then it crosses in an almost easterly line on this map.
108 There appears to be a bar at that point. That is the one you have in mind, perhaps. In an easterly line to what is marked "Coal dock."

A. Yes.

Q. Then it takes a southeasterly and southerly direction and strikes the artificial channel?

A. Across there (indicating).

Q. Crosses the artificial channel just west of the southerly end of Grassy Point and fairly adjacent to it?

A. Southeasterly end.

Q. Then it swings over to the Wisconsin—toward the Wisconsin shore or near the Wisconsin shore at a point marked G?

A. Yes.

Q. On Minnesota's Exhibit 3 following in the line of the red line on Minnesota Exhibit 3 to the point E and to the point A. Now I understand from your testimony that that is the deepest channel of water from Fond du Lac down to the head of Grassy Point. Am I right in that?

Mr. Bailey: That is objected to unless included in the question the reference to the bar which the witness has described.

A. Of course anybody looks at the map can tell that that is the deepest water. I don't know what you are trying to prove that that is all river, because there is a continuous channel down there. If that is it I should say that this upper bay has no characteristic of a river whatever. You never saw a river like that on the map or anywhere else. That's a bay.

Q. Are there scourings through a bay?

A. Wherever there is a current from one cause or another there will be scourings there, of course. The inflow from the lake
109 may produce it just as much as the outflow.

Q. Is one of the characteristics of a bay the current running through it?

A. That would be a characteristic of a bay where it is fed by the river, because the river must discharge its water somewheres and it discharges it into the bay and the greater the volume of water discharged in the bay the greater the current that would cut the channel.

Redirect examination.

By Mr. Bailey:

Q. You have spoken several times about a channel in a bay, or any water, for that matter, following the shore line or trend of the shore. Now I will ask you if there was south of Big Island a very deep channel there through which the waters from the river above flowed?

A. Oh, yes, there was quite a deep channel.

Q. I will ask you whether in your opinion the waters of that

channel had any influence upon the sort of hook that we find over here where the Carnegie Coal Dock and Zenith Fuel Dock?

A. That is a pretty hard question, but what waters flowed through here would have a tendency to throw the water further over to that shore, no doubt, like where one river beats another it will throw the current over to the other shore.

By Mr. Fryberger:

Q. Calling your attention to this channel south of Big Island, was the water just as deep there before the dredging except channel down to this point marked B, as it was up the——

A. That was our idea. I never looked up the chart very
110 close. We considered that just as deep a channel, but I don't know.

Q. And just as much current in it?

A. There was a good current come down through both places.

Q. But as I understand your testimony the south channel was the one that was navigated?

A Yes, sir.

Q. Unless you had business on the North Shore?

A. Yes.

Recross-examination.

By Mr. Hudson:

Q. That was because it was shorter?

A. I suppose.

Q. On the kind of craft that you used at that time only drew a few feet of water?

A. When we first came here the ordinary craft only drew about nine feet of water, from eight to nine feet package steamer, about.

Q. And you could go almost anywhere?

A. Any place where there was eight or nine feet of water we could go.

By Mr. Gard:

Q. You had a boat that you navigated the St. Louis River there with?

A. Yes, sir.

Q. What was the name of it?

A. We didn't have it named.

Q. How much water did it draw?

A. It drew about three inches when it was light; about three feet when it was loaded with twenty thousand of lumber.

Q. In other words you could pretty near run on the dew?

A. Yes.

Q. In other words, you didn't have to search for a channel?

A. I will tell you how we had to search for the channel.
111 We poled that scow a good deal when it was calm. We knew these channels very closely. We knew all about them be-

cause we had to start the boat, pole her up strong enough so we could cross the deep channel. I knew that channel at one time just as perfectly as anything could be, because I spent years around there.

Q. Mr. Merritt, I show you Minnesota's Exhibit 1?

A. Yes.

Q. There is a channel here marked H?

A. Down in the west of Minnesota Point,—or Grassy Point.

Q. You knew of that channel there?

A. Oh, yes.

Q. You have seen boats navigating that channel?

A. Oh, no, we always used to go across this way (indicating).

Mr. Bailey: Is that what you referred to, you pointed to a line? Was that A, B, D?

The Witness: Yes.

Q. If I understand, Mr. Merritt, you went across there when you went on the south side of the island?

A. Yes.

Q. And you usually went on the south side of the island?

A. Yes.

Q. But you knew of this channel marked H?

A. Absolutely. Of course I delivered lumber and supplies for all these contractors for the road.

Q. And you have seen boats navigate that channel, of course?

A. Well, sir, I don't know as I ever did.

Q. How did you know there was a channel there?

A. Why, because I knew about Mead's survey and acquainted with this map here when Adam was a baby pretty near, when he first got it out, and, as I say, we had a little scow and used
112 to supply these people up here and poled all over this.

Q. You have poled all over that channel marked H?

A. You bet your life, many a time give her a scoot and go across.

Q. And you found pretty deep water?

A. Just the same as marked.

Q. Mead's map shows the proper depth there so far as you know?

A. Yes, so far as anybody knows.

Q. What is the earliest navigation on the St. Louis River you have knowledge of?

A. '56, fall of 1856.

By Mr. Owen:

Q. What class of vessels were navigating at that time?

A. Well, they had small steamers and there was a boat used to run up there, a sailboat called the Algonquin. You could go up there on the Algonquin for three dollars and generally take you three days to go up, and get your board. She was a sail vessel. That was the first that navigated that river after we came here.

Q. How much water did that draw?

A. Well, small schooner I should think by the build of her she would draw four feet of water light.

Q. How long was it after you came here was it when the steamboats made their appearance?

A. Fall of 1856 Steamer Seneca was here.

Q. How much water did that boat draw?

A. Oh, I presume six or seven feet, as I remember.

Q. That was the first steamboat, was it?

113 A. Yes. Well, no, there was another one, I forget the name of that, a little side wheel steamer.

Mr. Bailey: Carson?

The Witness: Carson, a little side wheel steamer friend of mine was engineer on it, Ed Ryder.

Q. How far up did the Seneca navigate?

A. She went to Fond du Lac.

Q. This other one you mentioned?

A. Didn't draw but a couple of feet of water. She would go to Fond du Lac. They all went to Fond du Lac.

Q. Most any of these boats could go anywhere in the bay?

A. Go any place where it was deep enough.

Q. It was deep enough almost all over for them?

A. There's places in that upper bay that ain't deep enough for a canoe, hardly.

Q. They didn't have to search very much for a channel?

A. Yes, we did, but the way they used to guide themselves in these different channels was by the grass. The grass would come up in the spring in the more shallow water. It was very easy to get up there.

By Mr. Gard:

Q. As I understood you, you put the State line on your map there on the theory that the Superior Bay and St. Louis Bay are arms of the lake and not a river; isn't that right?

A. Yes, and on the general understanding here we had in the old days.

Q. Who did you have an understanding with?

A. Well, we people that lived here in the old days, old

114 mossbacks, fisheaters, whatever you are a mind to call them.

Q. You said there was never any contest about the State line?

A. No. We all knew where it was in the middle of the lake here, middle of the bays, no chance for a contest.

Q. And that was on the theory, as I say, that you considered the Superior Bay and St. Louis Bay an arm of the lake and not the river?

A. Yes. We considered the river came in up here at Big Island where it divides there in to the north and south channel.

Q. Now, Mr. Merritt, you said that Minnesota's Exhibit 13 was in common circulation at the head of the lakes, did you?

A. Yes, I think it was. I know I had it.

Q. You see, don't you, that that is marked "Mouth of St. Louis River" at the entry between Minnesota and Wisconsin Point?
A. Well, that is the mouth of the St. Louis.
Q. That is what you considered the mouth of the St. Louis River?
A. Yes. And this is where the river commences to run through the bays, and this is the mouth of it where it runs into the Big Lake.
Q. But you considered the mouth of the St. Louis River between Wisconsin and Minnesota Point?
A. Yes; of course it runs through there, don't it? No other place for it.

Mr. Bailey: The same as the St. Lawrence is the mouth of it, it runs through there, too?
The Witness: Yes.
Mr. Fryberger: Counsel asked you something about a boat drawing fifteen feet of water. I will ask you whether or not prior
115 to the time this channel was dredged a boat drawing fifteen feet of water could go up to Fond du Lac at all?
The Witness: Never did.

Q. Through any channel?
A. Never did.

116 Rec'd July 19, 1917. D. E. Roberts, Commissioner.

WEDNESDAY, July 18, 1917—10 a. m.

The hearing was resumed before the Commissioner, Hon. David E. Roberts, counsel for the respective parties being present.
The taking of the testimony was resumed as follows:

ALFRED MERRITT, was called as a witness by the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Merritt, where do you reside?
A. I reside in the City of Duluth.
Q. And have for how long?
A. I have held my residence here and in what is called West Duluth, or used to be called Oneota, ever since 1856.
Q. You are a brother of Leonidas Merritt who was on the stand yesterday.
A. Yes, sir, a younger brother.
Q. And what is your age, Mr. Merritt?
A. I was 70 years old the 16th of May of this year.
Q. So, you must have been born in 1847?
A. In 1847.
Q. And came to Duluth when you were nine years old?
A. Nine years old past.

Q. And your parents located at what is Oneota, now part of the City of Duluth, at that time?

A. Yes, sir. My father was there in 1855; my mother came in 1856, with us five boys.

Q. And Oneota, where you lived, is just a little easterly or
117 Grassy Point, is it not?

A. Yes, sir.

Q. And you continued to reside at that point until about how many years ago?

A. At that point and Fortieth Avenue until about ten years ago.

Q. And at that time you moved up into the eastern end of the city?

A. Yes, sir.

Q. What did you do in your boyhood and early manhood? What was your business in those days?

A. As a boy I used to boat around the bay and have my fun in boats and sailing. As I grew to manhood I worked in the lumber woods, and sailing.

Q. Did you at any time navigate these waters between Wisconsin and Minnesota points and Fond du Lac, say? That is, I mean in a commercial way.

A. In 1864 I was sailing on the lake, and we used to load lumber at a place called Milford, and then at Oneota and Rice's Point, and go down the lakes. In 1868 I was a pilot on the tug Agate, towing stone; took the stone above Fond du Lac, at Sandstone, to the Superior entry; and after that I was navigating the rivers and bays here, at the head of the lakes.

Mr. Fryberger: Did you show where Milford was located?

Mr. Bailey: I will have him mark that on the map.

Q. Did you have a pilot's license?

A. Yes, sir.

Q. Calling your attention to Minnesota Exhibit 3, I will ask you if you can locate on that map where Milford is? Here is the furnace company dock, and here is the Zenith Furnace Company property. (Indicating on the map.)

A. This was Milford at that time, and this was Kingsbury's Bay. (Indicating)

118 Q. Now let us get a mark of some sort on that. I will ask you, Mr. Merritt, if you will mark here with an M, we will say, to represent Milford?

The Commissioner: There is an .M on there.

Mr. Bailey: All right.

Witness: It is on the old original map there, on the old survey, marked Milford. This is Milford right in here; that is where the saw mill was, and here is the dock. (Indicating.)

Q. Just put a P there, will you, where you say Milford was?

Mr. Powell: Why not mark it Milford?

Mr. Bailey: All right; write it out with the consent of counsel,

I will write "Milford" just there.

Mr. Powell: I think that is better; it will not be so confusing.

Q. That was about the point I have marked "Milford" on Minnesota Exhibit 3 where it was located?

A. Yes.

Q. And you continued to navigate these waters for how long a period; that is, until how recent a date? I mean in a commercial way. Of course you have been up and down for other purposes.

A. Yes. I was just trying to think back. I think it has been 34 years since I quit sailing.

Q. Along about 1883?

A. Somewheres there, yes.

Q. But up until that time you were sailing up and down these waters a good share of the time, were you?

A. Yes, sir, and the lake.

Q. What experience did you have on the main body of Lake Superior as a sailor?

A. I was for years aboard the old schooner Pierpont, before
119 the mast. In the winter of 1869-70 we built a schooner, scow schooner, and I was the master, captain.

Q. In that connection, Mr. Leonidas Merritt, yesterday, said something to the effect that he assisted in or had something to do with hauling freight for the building of the Lake Superior & Mississippi Railroad, what was later the St. Paul & Duluth, and is now the Northern Pacific.

A. Yes. We had a scow at that time, a scow with a couple of lug sails on, and we used to sail when we could and pole when we could not sail, and we carried the freight for them up the bay, and also delivered the lumber for the old Clark house, and different buildings here in Duluth, from the Oneota mill. That winter we built a scow schooner, the Chaska.

Q. When you were hauling that freight, from what point to what point did you haul it, mostly?

A. Most of the freight in the shape of lumber was taken from the Oneota mill, and in the shape of iron and stuff for the railroad was taken from the end of Connor's point, the dock that was there, called Paton's Point.

Q. And where was that hauled mostly? Anywhere along the line of the road?

A. Yes; we took it into what is called Spirit Lake now—I remember quite a lot of stuff—and distributed it along at different places.

Q. Spirit Lake that you refer to is the Spirit Lake shown on these plats just above Big Island?

A. Yes, sir, just above Big Island.

120 Q. And did you deliver this freight at points from there on down towards Duluth, wherever it was needed for the construction of the railroad and wherever there were dockage facilities?

A. Well, we delivered some at what we call the Knowlton Place,

but mostly went to Spirit Lake, out there. A man by the name of Graham was there doing the work.

Q. Where is Knowlton's place?

A. Knowlton's place is—let us see—what was it we used to call it?—just above Indian Point.

Q. Some of us later settlers will have to find out where Indian Point is.

A. The first place above Milford was Crosier's Point, and the next was Indian Point. Crosier's place came above that, and below Marshall's place, between Marshall's place and Indian Point.

Q. Were you familiar during all that time with the usual course of traffic in these waters?

A. Yes, sir.

Q. Now calling your attention to Minnesota Exhibit 3, I will ask you when going up these waters towards Fond du Lac, and when you got opposite Grassy Point, what was the course that traffic usually and generally took from there on up towards Big Island?

A. We avoided these here—there was a rush bed here. (Indicating.) We went here and just skirted this island here, and up through here.

Q. The line you have just pointed to is substantially the line marked A-E-G-B-D on this map?

A. Yes.

Mr. Fryberger: Marked in red?

121 Mr. Bailey: Marked in red.

Witness: Yes, practically that is the point. There was a point of rushes came out here, and we went here. (Indicating.)

Q. Where you say those rushes were was just easterly of the red line between the points marked B and G?

A. Yes, sir.

Q. Now was there another channel southerly of that, that was sometimes used?

A. Yes; when we went to Milford we used this other channel here. (Indicating.)

Q. I say southerly of this.

A. Oh, southerly?

Q. Yes. Well, according to the wind sometimes; we used to go over here, but not for tugs as a general thing. Here we are.

Q. The line you are just pointing to is the line marked E and curving to the left around to the point F?

A. Yes.

Q. You say that was sometimes used?

A. Oh, sometimes used.

Mr. Fryberger: Not for tugs?

Witness: No; not for deeper draught boats.

Mr. Bailey: I am now putting an H on Minnesota Exhibit 3, just easterly of the line B-G.

Q. Now calling your attention to this sort of white curved line on which I have placed an H on this Minnesota Exhibit 3, I will ask you if that line or channel was commonly used at all?

A. Well, just for to go to Milford we used that there.

Q. That is just when you had a load to go up to some point on that line?

A. Yes, on that line.

Q. Now was there, or was there not, along towards the
122 westerly end of that which appears to be a channel and on which the H is placed, a bar or a shallow place along just easterly of the point marked C? This is marked C.

A. There was a bar—you will see it on the original map—there is a bar there marked in 7 and 8 feet over here; we used to avoid that by going in here sometimes; but that is above Milford dock.

Q. And was this line which is marked A-E-G-B and C a better line for navigation than to go around on this curve marked H?

A. Oh, yes, it was a good deal straighter; it was a better line, sure.

Q. And practically all the traffic took that line?

A. Yes, sir.

Q. Now in taking this line marked A-E-G and B, supposing you are going to the north of Big Island, what would you do when you got to the point B?

A. We used to go straight through here to the north of this island here. (Indicating.)

Q. You see this is sort of an indication of an old channel; this is the dredged channel?

A. Yes, sir.

Q. Is it or is it not true that you would take substantially the line marked B-C from that point on to get to the channel to the northerly of Big Island?

A. Yes, sir.

Q. Now, Mr. Merritt, calling your attention to a paper which is marked Minnesota Exhibit 13, the so-called Bardon map, were you familiar with that map, and was it a map in common use in the early '70's, along in '76, when this appears to have been published——

A. Why, yes.

123 Q. —at the head of the lakes here?

A. Yes, sir.

Q. And is that a well-known map, that is commonly referred to even today by the early residents as being the map, or one of the few maps, in use in those early days?

A. What date is this?

Q. This is '76, this particular one.

A. Yes, sir, it was.

Q. And was that map always, so far as you know, considered accurate?

A. Yes, sir, so far as I know.

Q. Now calling your attention to the line on this map, dotted line, which is marked "State Boundary Minnesota and Wisconsin," you see that line as it runs up these waters, do you?

A. Yes, sir.

Q. Is it or is it not true that that line substantially was considered and generally known amongst the settlers here at the head of the lakes as the State boundary between Minnesota and Wisconsin?

A. It was; yes, sir.

Q. What were the waters between Grassy Point and Rice's and Connor's point usually and generally known as, that is, by what name?

A. St. Louis Bay.

Q. And what were the waters between Rice's Point and, say, the upper end of Big Island known as in the early days?

A. Between Rice's?

Mr. Fryberger: You have got that wrong. You said Rice's Point.

Mr. Bailey: I should have said Grassy Point and the upper end of Big Island.

A. Upper St. Louis Bay, or St. Louis Bay, or St. Louis.

124 Q. Have you any maps or diagrams of this territory, of your own?

A. Well, only a plat, the government plat.

Q. Have you got that here?

A. Yes, sir.

Q. Will you produce it, please?

A. That is one; and that is another.

Q. Well, let us take this marked first.

(The witness produced a red book from which two small maps were cut. One of the small maps was marked Minnesota Exhibit 14 and the other was marked Minnesota Exhibit 15.)

Q. Showing you a paper which has been marked Minnesota Exhibit 14, I will ask you if that is a plat of township 49-15 which you have just had cut out from a book of plats in your possession?

A. Yes, sir.

Q. And is Minnesota Exhibit 15 a similar plat?

A. Yes.

Q. Of 49-14?

A. Yes, sir.

Q. Which you have just cut out from this book?

A. It is.

Q. Now just let us see the book a minute, to get an idea of about how many you have in there?

A. Range 10 to 15 west.

Q. What townships?

A. It goes clear up to the British boundary.

Q. Clear from the head of Lake Superior?

A. Yes, sir.

Q. And are these two plats which you have just cut out of this book taken from this book which covers the plats of each of the townships from ranges 10 to 15 west?

A. Yes, sir.

Q. And which go from township at about the head of the lakes to the Canadian boundary.

A. Yes, sir.

125 Q. How many townships are there between here and the Canadian boundary?

A. I don't know.

Q. About 49 to 70; isn't it?
A. I don't know just the number.
Q. Well, see what the last one is.
A. They may not all have been surveyed at that time, but there are some of the township boundaries there.
Q. The townships run substantially from 49 up to about 70, do they not?
A. Yes, somewheres up there.
Q. And you have in this book plats of most of the townships in that territory?
A. Yes, sir.
Q. From ranges 10 to 15 inclusive, both ways, west?
A. Yes, sir.
Q. Now, how long have you had this book from which these two exhibits were cut?
A. It must be about 38 years or more.
Q. About 38 years?
A. Yes, I think so, or 40.
Q. And were these plats in common and general use throughout the head of the lakes region?
A. Yes, sir.
Q. And in this territory?
A. Yes, sir.
Q. This plat book, which seems to be bound in red leather, by whom was that gotten up? That is, who compiled them and put them together?
A. My brother Leonidas and Jewett of St. Paul; used to call it the Jewett map.
Q. And was that gotten up during the time that your brother Leonidas was in the map business, as he testified yesterday?
A. Yes, sir.

126 Q. Now calling your attention to Minnesota Exhibit 14, that appears to have the words "St. Louis Bay" marked on it, and just to the right of those words, the words "Wisconsin State Boundary." I will ask you if the words "Wisconsin State Boundary" are on what is known as Big Island?
A. Yes, sir.
Q. And were the waters just westerly of Big Island known in the early days, as far back as you can remember, and by common repute,—and were they or were they not known as St. Louis Bay up as far as that?
A. Yes, sir, they were. Where the waters divided there this was St. Louis Bay.
Q. Now where was the mouth of the St. Louis River with reference to this island?
A. Well, I always considered the mouth of St. Louis River where it divided here and went into St. Louis Bay.
Q. That is just at the head of Big Island?
A. Yes, sir.
Q. That is where St. Louis River strikes Big Island?
A. Yes, sir.

Q. You considered that the mouth of the river?
A. Yes, sir.
Q. And from there on down——
A. St. Louis Bay.
Q. St. Louis Bay; and known as upper and St. Louis as divided by Grassy Point?
A. Yes, sir.
Q. Was this Minnesota Exhibit 15, which appears to be a township plat of 49-14, also in common use?
A. Yes, sir.
Q. And commonly referred to, and business done on the strength of that plat?
A. Yes, sir. That is a copy of the field notes and plat.
Q. Field notes?

127 A. Yes; government survey as surveyed by Martin, Eppler, and Burt. Burt was a son of the man who invented the Solar compass.

Mr. Gard: Are you going to offer those exhibits in evidence?
Mr. Bailey: Yes. I will offer them right now.
Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial and not the best evidence.
The Commissioner: Admitted, subject to the objection.

Q. State whether or not the transportation out of Milford, that is, by water, was or was not usually in craft of very small draft, scows, or something like that.
A. The lumber that was shipped to Superior in the early days was always in open scows, and the lumber that was shipped down the lakes, on the old Ford—I remember the George W. Ford being up there, and the schooner Fretter (or Fratter) of Ontonagon, and the Pierpont; of course they were lake vessels and they went down the lake.
Q. Now calling your attention to Minnesota Exhibit 9, which was produced by your brother Leonidas, yesterday. Was that map in common use here at the head of the lakes at the time it was published?
A. Yes, sir.
Q. And do you know whether your brother Leonidas went to considerable expense and trouble to get a right, or not, and have some surveys made, and so forth, in order to——
A. I don't know exactly as to that. This is the Jewett map?
Q. Yes. Here is another one published in 1889; that is a year later, and in a little larger scale.

A. Yes.

128 Q. Was this also—Minnesota Exhibit 12—in common use here at the head of Lake Superior, and considered correct?
A. Yes, sir.
Q. Now calling your attention to the red line on this map, marked in one place "St. Louis Bay" and the other "Bay of St. Louis", and farther down "Bay of Superior"——
A. Yes.

Q. What did that line indicate?

A. Generally considered state line.

Q. And you see that red line is carried on over to the west of Douglas County?

A. Yes.

Q. Between Douglas County and Carlton County. Did you know George R. Stuntz in the early days?

A. Yes, knew him well.

Q. Do you know whether he as a surveyor ran out the state line as between Wisconsin and Minnesota on the westerly side of Wisconsin and easterly side of Minnesota?

A. So he told me.

Q. He is dead now, is he not?

A. He is dead.

Q. What if anything, did you hear him say with reference to that, or how he did it?

A. Well, he told me he went up in a canoe as far as he could get up possibly, so as to take all the land in Wisconsin he could; but he said he rather thought he went a little too far.

Attorney-General Owen: Now we object to that as hearsay, and move to strike out the answer.

Witness: Of course this is not to go on the books: I have got the axe that blazed the line.

Q. You have got the axe that blazed the line between the
129 two states?

A. Between Wisconsin and Minnesota—in my possession.

Q. Given to you by Mr. Stuntz?

A. Given to a man by the name of McDonald, who helped Mr. Stuntz, and then by McDonald given to me. Of course this is immaterial. I also have the compass, or had the compass, and the State has got it now, that surveyed the line—the Solar compass.

Q. The one he used?

A. The one he used.

The Commissioner: Which State has it—Minnesota?

Witness: Yes, Minnesota has it. I really ought to have given it to Wisconsin, but I gave it to Minnesota, and it is in the Historical Society now. Bought it of the widow.

Q. These waters between Rice's and Connor's Points and up above, or just above Big Island, which you have described as upper and lower St. Louis Bay, what is the character of those waters? I am asking you this with the idea that you will bring out what is in your mind as distinguishing these waters as a bay rather than a river. Just state in your own way why you so consider them, and why they were so considered.

A. Well, it is on account of the width, the width of the water, and then the upper St. Louis Bay with islands in it, and on account of the general shallowness of the waters; but principally as to their width, distinguishing it from the river above.

Q. The river above this point which you have described as the mouth, is it confined within quite well defined banks nearly all of the way?

130

A. Yes, sir.

Q. And as you get beyond the mouth, what is the fact as to whether the banks are well defined, or whether the waters are spread out, spread out over a considerable expanse?

A. That is, you mean the St. Louis River above the island?

Q. No, from the westerly, or perhaps southerly, southwesterly, end of the island down towards Rice's and Connor's Point. What is the fact as to whether the waters spread out there to a considerable width?

A. Yes, sir; they spread out there as shown by the map.

Q. Do you know about how far it is across, how far across these waters it is say just at the easterly of Big Island?

A. It is over a mile.

Q. And take it above Big Island, what in a general way is the width of the waters above that point? Of course I understand it is different at different places, but in a general way.

A. Yes. I should think they are about less than a quarter of a mile wide there, considerably less.

Q. Would or would not that be at the widest point that you speak of?

A. Yes, sir.

Q. A good share of the way are they a good deal narrower than that above Big Island?

A. Yes, sir.

Q. Do you know about what the narrowest point up between Big Island and Fond du Lac is, and what is known as the village of Fond du Lac?

A. Well, opposite New Duluth there it narrows down very narrow, probably not over 200 feet, and this side of Fond du Lac I remember the tug channel was about—oh, I should not say it was over 50 feet wide; possibly 100, but not over that. That is, the navigable water.

131

Q. Calling your attention again to Minnesota Exhibit 3 and this curve on here that indicates some kind of a channel marked H. I will ask you if such channel as there was at that point was narrower or wider than the channel on the line marked A-B?

A. It was narrower.

Q. To what extent would you say? how would they compare?

A. Oh, I should say this was at least twice as wide or more in here.

Q. That is, A-B was twice as wide?

A. Yes.

Q. Do you know the meaning of the words "Fond du Lac"?

A. Well, as I understand it, it is the head of the lake or bottom of the lake—Fond du. I am not a Frenchman, but that is what I understand—the bottom of the lake.

Q. I think I saw some place where you described it as where "the bottom meets the top," or something like that.

A. Yes.

Q. What is the fact as to whether there were tides in these waters, upper and lower St. Louis Bay?

Attorney-General Owen: Objected to as calling for a conclusion of the witness, on the ground that he is not shown competent to testify upon that subject.

The Commissioner: Go ahead, Mr. Merritt, and answer the question.

A. There used to be a tide there; there is a tide there,
132 especially when there comes a northeast wind and raises the water in the lake. I know in towing logs, if I may be allowed to explain——

Q. Explain.

A. When I used to tow logs up to Milford, I would catch it; when the tide went up the bay I could tow very easily, because I did not have to tow against the current. When the current changed, why, then I had to wait. But the tide used to go up that way.

Q. How far up did the tide go?

A. Well, I have seen it go up to Fond du Lac, raise the water at Fond du Lac, as far as Fond du Lac. I think the Fond du Lac fellows will bear me witness as to that.

Q. And would logs that were left there in those waters float both ways, according to the tide?

A. Yes, sir.

Q. Can you give us any idea how far you have known logs to float upstream, that is, up towards Fond du Lac, from any given point?

A. Well, I have not known logs in the main river going up, because I did not happen to be there when the tide was, but I know the tide goes as far as Fond du Lac. Before the canal was built I have seen blue lake water come two-thirds in St. Louis Bay—the lake water itself.

Q. When you say two-thirds in St. Louis Bay——

A. The lower St. Louis Bay.

Q. You mean two-thirds of the way up?

A. Yes, sir; blue lake water.

Q. Do you know what the fact is as to the height of the water at Fond du Lac as compared with the water in the main body of
133 Lake Superior?

A. Well, I don't know, except when I was on the survey of the St. Paul & Duluth or Lake Superior and Mississippi Railroad, we run down and took a level at Fond du Lac of the water, and the wind was southwest then; when we got down here to Minnesota Point we took a level, and we found out that Fond du Lac was two feet lower than it was here, because it was a northeast wind when we took the level here.

Q. That is, the water at Fond du Lac was two feet lower than it was at Minnesota Point?

A. Yes; I remember that all right. One place it was a northeast wind and the other it was a southwest wind.

The Commissioner: It depends on the direction of the wind then?
Witness: Yes.

Q. Calling your attention to Minnesota Exhibits 8 and 7, the so-called Bayfield map. Was that map a map which was in common and general use in the early days and well known amongst navigators?

A. We had no other plat except the Bayfield plat up till after—Meade was here in 1860—General Meade, or Captain Meade, of the Engineer Corps, was here in 1860, and then he came in 1861 again; he surveyed the head of the lakes in 1860; and then he came in the spring of 1861, but the Rebellion had commenced and he went away, joined the Regular Army. He was a captain of engineers, in the Engineers' Corps.

Q. Then, that was the only map in use up to that time?

A. Yes, sir. And I think that they did not get the real chart out until 1866—the chart of the head of the lakes. The Meade chart was published, I think, in 1866, and this was the chart
134 they used at that time, the Bayfield chart.

Q. Just state what you know or what is generally understood as to the accuracy of that map.

A. It is reported, as understood, that Meade said it was the greatest engineering feat that had ever been, and the quickest time and the correctest map that had ever been made up to this time—that Bayfield chart.

Attorney-General Owen: That is objected to on the ground of hearsay, and I move to strike out the answer.

Witness: And it was so correct that the government, when they made their survey in 1866 and finished it, used the Bayfield chart for all the Canadian waters down there, and I think they do yet, today.

Attorney-General Owen: Same objection to this answer, and the same motion.

Q. I take it the marks as to where Duluth and Oneota are were put on at a later date.

A. Yes, sure.

Q. There was no such place?

A. This part here.

Q. On Exhibit 7.

A. The pickets were standing; I have seen the pickets here at Roy's place there, the Hudson Bay fort.

Q. You are pointing to a point marked on this exhibit, on the Wisconsin shore "Old N. W. Fort"?

A. Yes, that is it.

Q. And you say the pickets were there when you came here?

A. Yes, I saw them.

Q. And it is substantially that location?

A. Yes, that is the location.

Q. And I see they have Oneota marked on here.

135 A. There was no Oneota then.

Q. Was that correctly marked on here?

A. No, sir; it ought to be away over here.

Q. That must have been put on at some later time, of course. Now there appears to be a line of soundings marked on here. You have examined that, have you?

A. Yes, sir.

Q. And those represent substantially what you have testified to as the state line?

A. Yes, sir.

Q. Except possibly through lower St. Louis Bay.

A. Yes. They have given Minnesota too much there, it looks, from the sounding, but this here is correct, and there was deep water through there of course. (Indicating.)

Q. And just as deep as on the north side?

A. Yes, sir.

Q. That is, the Minnesota side?

A. Yes.

Q. So that the water through lower St. Louis Bay, you say, was just as deep close to the Wisconsin shore as it was the Minnesota shore?

A. Yes.

Q. As a matter of fact do you think it was any deeper over there?

A. About the same, although we used to go through this part here.

Q. That is, you went on the Minnesota side?

A. Yes.

Q. Because there was not anything over——

A. No.

Q. There was not anything on the Wisconsin side?

A. No.

Q. That is the only reason?

A. That is all.

Q. Now up above Grassy Point is this line of soundings which go up southerly of Big Island where the figures are marked on

136 there. Is that almost identical with the usual line of navigation?

A. Yes, sir.

Q. During all the times that you knew anything about it, up to the time the channel was dredged?

A. Yes, sir.

The Commissioner: Mr. Merritt, one of these exhibits is marked "Track Survey". Do you know what that means?

Witness: Track Survey?

The Commissioner: Yes.

Witness: I don't know; no.

Mr. Fryberger: We will bring an engineer from the Engineer's office.

(A short recess was here taken.)

By Mr. Bailey:

Q. I want to ask just one or two questions more, Mr. Merritt. Calling your attention again to Minnesota Exhibit 3, you said that some of the lake vessels used to come up through this channel and load at Milford?

A. Yes, sir.

Q. Did they load right at Milford, or was the lumber taken on scows out to them?

A. There was a dock built out and they scowed the lumber from the mill out to this dock and then laid it on the schooner.

Q. That was on account of the shallow water?

A. Yes.

Q. So that a schooner could not get up to the dock?

A. Not up to the mill dock.

Q. Did these carriers that were so loaded with lumber have to cross this bar that you have indicated just easterly of point
137 C—it comes right in here—or did they come back through the channel?

A. They came back through the deeper water.

Q. So they did not cross this water that appears easterly of point C?

A. No.

Q. The water too shallow there?

A. The water too shallow.

Mr. Fryberger: Ask him what they drew.

Q. What did they draw?

A. The schooner Pierpont drew nine feet fully loaded, 150,000 feet of lumber and shingles and stores and lath they used to pile in, but she never loaded full up there. Loaded the hole full and finished out down below.

Q. Do you know what she drew as she loaded there?

A. She drew probably seven feet and a half.

Q. Now calling your attention to Minnesota Exhibit 1, which I think I have not called your attention to while you were on the stand. This is the Meade map so-called.

A. The Meade map; yes, sir.

Q. You were familiar with that in the early days?

A. Yes, sir.

Q. With reference to Milford as indicated on this map, is there anything on this map that indicates where Milford was?

A. I think it is marked on the point there, five houses—that is what there was, and there at the head of the slough there ought to be marked a boom. Do you see it there. Here it is.

Q. Here is the word "Boom," which is just northerly and a trifle westerly of the point marked C in red, and then on the point just below that there are three dots. Do you know what those
138 indicate?

A. Those are houses.

Q. And then a little farther to the east there are two dots.

A. Yes, sir.
Q. What do they indicate?
A. They were houses; and then east of where it is marked "Boom" there should have been a dot there for a mill.
Q. Well, there is a dot there all right enough.
A. Well, that is the mill.

Cross-examination.

By Mr. H. V. Gard:

Q. Mr. Merritt, you say you came to Duluth in 1856?
A. Yes, sir.
Q. And was twelve years old at that time?
A. I was nine years old, nine years the May before, that spring.
Q. From where did you come?
A. Came from Austinburg, Ashtabula County, Ohio.
Q. You were born in 1847?
A. Born in 1847; yes, sir.
Q. Now you say that in your early boyhood you sailed on the waters of St. Louis Bay here and river, in boats?
A. Why, yes, we had small boats, you know.
Q. What kind of boats were they?
A. Well, boats, mackinaw boats.
Q. How much water did they draw?
A. With center-board and all they would draw over three feet probably, maybe four feet.
Q. So you could go anywhere on the St. Louis Bay?
A. Yes, sir.
139 Q. Or on Superior Bay?
A. Yes, sir.
Q. How far up did you go with your sail boats?
A. The first time I ever went to Fond du Lac was in the spring of 1857.
Q. How did you go then?
A. Went in a mackinaw boat, Mr. Ely's mackinaw boat.
Q. In what boat?
A. Mr. Edmund F. Ely's mackinaw boat.
Q. How much water did that draw?
A. Oh, she was a center-board boat. With the center-board down she would draw about three feet of water.
Q. You sailed up, did you?
A. Yes, sir, at that time.
Q. And when did you first navigate the waters there in a larger boat?
A. I cannot tell just exactly the month, but it was about the middle of the summer of 1868 that I was pilot on the tug Agate, an Ontonagon boat that was chartered by the day to carry stone to the old Superior entry.
Q. To the Superior entry, from where?
A. From Fond du Lac. From Fond du Lac we were taking the stone to the Superior entry.

Q. How much water did that boat draw?
A. She would draw when she was wooded up a little over six feet. We used to carry wood in those days.
Q. How long did you run on that boat?
A. I delivered the boat to Ontonagon some time late in the fall.
Q. Of what year?
A. Of 1868.
Q. Just ran it part of one season?
A. Part of one season.
Q. What kind of boats did you tow?
A. We towed scows, deck scows, with rock, from Fond du Lac down; I think sometimes we had three, two and three scows
140 generally in tow.
Q. And how much water did the scows draw?
A. Oh, they were shallow scows, probably not to exceed three feet and a half loaded.
Q. And they would go anywhere then that your tug would go?
A. Yes, sir.

Mr. Fryberger: What did that tug draw?
Witness: About six and a half feet.

Q. That was, you say, six and a half feet loaded down with wood?
A. Yes, sir.
Q. Now, is that the first navigating you did on these waters with a boat other than sail boat?
A. Yes, sir.
Q. And you navigated that boat part of the season of 1868?
A. Yes, sir.
Q. What boat did you next use in navigating these waters?
A. Let me see. I was pilot several trips on a boat owned by John Schutte.
Q. When was that?
A. I think it was in the spring of 1870. Now let me see—hold on. If I remember right it was 1869. I would not be sure.
Q. Do you remember the name of the boat, Mr. Merritt?
A. I was just trying to remember the name. I can't remember the name just now, I can't just recall it.
Q. How long did you run on that boat?
A. Oh, I just went up as accommodation to show the captain the route up to Fond du Lac.
Q. And did you go north of Big Island or south of Big Island?
141 A. I went south of Big Island.
Q. Now that was in 1869, you think?
A. I think it was in 1869.
Q. Did you make more than one trip?
A. I think I went three or four times; I think four times.
Q. Now is that all the navigating you did in 1869?
A. Well, no; I had a sail scow. Let me see. I had a sail scow—yes, I had a sail scow when I was delivering goods up and down the

bay and to Duluth from Oneota and from Connor's Point up to the bay.

Q. In 1869?

A. Yes, sir.

Q. How long did you operate that boat?

A. Well, we run that practically all summer.

Q. How much water did it draw?

A. Oh, she did not draw hardly any. She drew about thirty-six inches, about three feet, without the center-board. She had a center-board.

Q. And what other boat did you operate or sail on along about that time?

A. In the spring of 1870 we launched a scow schooner, called the Chaska, of 50 tons.

Q. And did you operate that?

A. Yes, sir.

Q. Where?

A. We carried lumber from Oneota down to Portage Lake, made several trips there, and also traded with merchandise from Duluth down, as a trading boat.

Q. As what?

A. As a trader.

Q. How long did you operate that boat?

A. We operated it until the 28th of August—27th of August, 1871.

142 Q. And what office did you perform?

A. I was master.

Q. And how much water did it draw?

A. She drew about five feet and a half, loaded.

Q. You could go most anywhere on these waters with that boat, then?

A. Yes, sir.

Q. Now what other boat did you operate on these waters?

A. Well, I will have to go back before now. In 1863—I think it was 1863, yes, or 1864, I shipped before the mast on the schooner Pierpont.

Q. Who owned the Pierpont?

A. I think H. M. Payton owned a third, and R. G. Coburn and Edmund F. Ingalls—Ed Ingalls—the other third.

Q. How long did you run on that boat?

A. I ran the summer of 1864 and the summer of 1865 and part of 1886, the latter part of 1866, on her, before the mast.

Q. What did you do principally with her?

A. Carried lumber between the head of the lakes and the copper mines below, Eagle River, Eagle Harbor, and Portage Lake. We used to have to go around the point before the canal was built. Also took one trip in 1866 with a load of iron ore from Marquette to Cleveland.

Q. Where did you get your lumber principally?

A. We got it in three different places; at this place called Milford, generally, first, and quite often at Oneota; we would start and load

there and finish out at the end of Connor's Point, at a place called Payton's Pool, Payton & Kimball's mill, where the coal dock
143 is now.

Q. Then the three places were: Milford, Oneota, and Connor's Point?

A. Yes, sir.

Q. Are those all the places you hauled lumber from?

A. Yes, sir.

Q. And you took that lumber down the south shore?

A. Yes, sir.

Q. How much water did that boat draw?

A. She drew nine feet when she was loaded.

Q. And you did not load her up the river, full?

A. Not all, no, sir; we finished out at Connor's Point.

Q. What did she ordinarily draw as you came down with your load from up the river?

A. Well, we used to come down with about seven feet and a half.

Q. Could you have gotten down with any bigger load on?

A. Well, no, not very well. As a general thing we used to tow her at night with yawl boats; there were no steamboats here and no tugs, and we could not drag on the bottom when towing with a yawl-boat, and when we got down to Connor's Point there was lots of water in the main channel down there, you know. So, we might have taken eight feet if we had a tug or anything up, you know.

Q. Now what other boat did you operate on these waters?

A. With my brother-in-law, Thomas Sanderlands, we bought the tug John Martin, from Houghton, and I was master of her.

Q. When?

A. Well, let me see. I would have to kind of guess about
144 that. About thirty-seven years ago, I think; it might possibly be thirty-eight years ago.

Q. That you bought it, you mean?

A. Yes.

Q. And how long did you have it?

A. I had it about two years and a half; I will say about three years I guess.

Q. And what did you do with it?

A. I was in the general towing business, of logs and schooners and in the general tug business.

Q. In the tug business—do you mean towing other boats?

A. Yes, and logs; mostly in logs from up the river and from Lefthand and the Nemadji to the different mills in St. Louis Bay and here.

Q. You went up the Nemadji River with your boat?

A. Yes, sir, used to go up there. Not very far though.

Q. Towed logs out of the Nemadji River?

A. Yes, sir. There was a boom there, a boom company.

Q. And where did you do your principal towing of logs then?

A. Well, I used to tow from down the lakes here, as far as Split Rock and Agate Bay or where Two Harbors is now, and then from up the bay, from up the St. Louis Bay, and mostly from Lefthand;

and also from the south shore, from the Brule, and from one or two other points; I forget the river there now.

Q. What was the destination of these logs?

A. Practically all of them in St. Louis Bay; some of them went to this side of Rice's Point, but mostly on the other side and over to Connor's Point.

Q. By "this side" you mean Oneota?

A. Yes, sir.

145 Q. The destination, then, of all of them was Oneota and Connor's Point?

A. Yes, Connor's Point; that is, in Howard's Pocket.

Q. Yes.

A. And Rice's Point on this side.

Q. That is Payton's mill?

A. Payton's mill, yes.

Q. Now how much water did that boat draw?

A. It drew seven feet.

Q. And where did you get logs from up the river, the St. Louis?

A. Let me see. I towed some logs from right where New Duluth is, or where New Duluth is now, the John Smith place, and then I towed some from a boom they had across the St. Louis River above the island, above the Big Island; there was a boom there, a company, and I towed some logs from there.

Q. At what place was that boom, Mr. Merritt?

A. That boom was above where the river divides and comes on the west side of the island and on the south side of the Big Island.

Q. About the vicinity of Spirit Lake?

A. Yes, above where you go into Spirit Lake; yes.

Q. Above where you enter Spirit Lake from the south, you mean?

A. Yes, above where you enter Spirit Lake going up the river.

Q. Yes. Now what other places up the river did you get logs?

A. Well, I towed from the Pokegama Bay, from what is called Kimball's Bay, or Kimball's slough, or what it is over there near the park.

Q. That is the first inlet south of Pokegama?

A. Yes, east of Pokegama.

Q. East of Pokegama?

A. Yes.

146 Q. Better east.

A. We used to call it Filber's slough or bay then. I see it is Kimball's now.

Q. Then your towing of logs up the river was from New Duluth, at the boom near Spirit Lake——.

A. Yes.

Q. ——and from Pokegama Bay, and some from Kimball Bay?

A. Yes, sir.

Q. Are those all the places you got logs from?

A. Well, it is all that I remember now. How many times I went to each place I could not remember, but I know we took logs there.

Q. In towing logs down from New Duluth, which side of Big Island did you go?

A. That raft that I took from New Duluth I took down on the south side of the island—a small raft I had there.

Q. And those logs that you took down Spirit Lake, which side of the island did you tow those down?

A. From Spirit Lake?

Q. Yes.

A. I went down on the north side.

Q. On the north side?

A. Yes, sir.

Q. How many trips did you make from Spirit Lake down?

A. I remember of only one trip from Spirit Lake down.

Q. And you went on the north side of Big Island?

A. Yes, sir.

Q. With those logs?

A. Yes, sir.

Q. Your principal navigating was the channel south of Big Island, wasn't it?

A. Yes, sir.

Q. That was the nearer channel in going up the river, wasn't it?

A. Yes, sir.

Q. And that was the reason you took it, wasn't it?

147 A. That is the reason we took it, sure.

Q. Do you know the difference in distance between the two channels up the river?

A. I don't know. It could be measured on the chart there.

Q. There is a substantial difference, though, isn't there, in distance?

A. Yes, there is some difference.

Q. The north channel being the longer?

A. The longer channel; yes, sir.

Q. Now did you operate any other boats on these waters in question?

A. I think that is all.

Q. What was the nature of that Schutte boat? I would like to have a description of it.

A. The Schutte boat?

Q. Yes.

A. She was really an excursion boat running between Duluth, and used to come up here to about where the canal is now—that was before the canal was cut, and then she would go up to Fond du Lac and make the round trip, round again. Of course there was no West Superior then, you know.

Q. What was her size?

A. Oh, I don't know. I think she drew six feet of water, something like that.

Q. About six feet?

A. Yes.

Q. And you piloted it south of the island?

A. Yes, sir.

Q. Now are those all the boats, Mr. Merritt, that you can recall that you have operated on these waters, the ones you have mentioned?

A. I think so; I think so.

Q. You spoke of a tug that you used in carrying supplies
148 for the St. Paul & Duluth road; did you?

A. Oh, that was a sail scow.

Q. That was a sail scow?

A. Yes. It had sails rigged in it. That was the one that drew about 36 inches of water.

Q. That was the lake draught boat?

A. Yes.

Q. And you landed with that scow anywhere?

A. Anywhere, yes.

Q. Mr. Merritt, you testified in regard to the waters of the St. Louis River in what is known as the Whiteside case, didn't you?

A. I think I did. I don't know. I presume I did.

Q. To refresh your memory, that was a case involving the title to a little island north of Big Island, called Palace Island now, I guess. Do you remember of testifying in that case?

A. Yes, sir.

Q. What other boats did you see navigating the waters of the St. Louis River and bay at the time you were operating it? Now name the principal boats that you saw operating on that.

A. Well, there was the side-wheel boat called the Kit Carson.

Q. Who operated that?

A. I don't know who was the captain of her. And then there was the steamer Seneca; she was a propeller.

Q. Do you know how much water the Kit Carson drew?

A. Oh, she was a shallow-draught, side-wheeler.

Q. You say shallow-draught; what do you mean by that Mr. Merritt? About how much?

A. Oh, I mean she probably did not draw over two or three feet of water; three feet, or possibly four.

149 Q. Now the Seneca, what kind of a boat was that?

A. She drew, as nearly as I can remember, about seven feet.

Q. Who operated the Seneca?

A. There was a man by the name of—one of the owners was a man by the name of—may I ask Mr. Howard the name of a clerk?

Q. Yes.

Witness: Who was Coburn's clerk there? You remember the fellow that used to be bookkeeper there in the early days.

Mr. Benjamin Howard: Captain John Wallin?

Witness: No, I don't mean that. I mean the storekeeper or clerk there, old R. G. Coburn's store.

Mr. Benjamin Howard: Holcomb is the name.

Witness: Holcomb. Well, this is a brother to George Holcomb. He was interested in the Seneca. I know, and who the other was I do not know.

Q. Do you know what channel the Seneca took in going up the river?

A. Yes, sir.

Q. How often did you see it?

A. She used to make daily trips up to Fond du Lac.

Q. Did you ever go up on her?
A. No, I never went on her. No. We could see her there.
Q. Did she go the north channel or the south channel?
A. She took the south channel when I saw her.
Q. The south channel?
A. Yes, sir.
Q. The south channel was generally used by boats that were operated then because it was the nearest channel, wasn't it?
150 A. Yes, sir.
Q. And what other boats did you see operating on the St. Louis River?
A. Oh, there was the George Frost.
Q. What kind of a boat was that?
A. Well, she drew about the same amount of water.
Q. About nine feet, you mean?
A. No, about seven feet I should say.
Q. About seven. And which channel did she operate in?
A. She went the south channel.
Q. By "south channel" you mean south of Big Island?
A. Yes, sir.
Q. Now what other boats did you see operate on the St. Louis River?
A. Well, I have been up on boats since that, within the last twenty-five years, different boats; I don't remember the name of the boats particularly. Been up several times on old settlers' excursions. We always went on that side.
Q. On the south side?
A. Yes, sir. The boats I don't remember, the names of them, in particular.
Q. Your principal travel then was on the south side of Big Island?
A. Yes, sir.
Q. Now can you recall any other boats that you saw operating on the waters of St. Louis River and bay prior to 1890, we will say?
A. 1890? Well, there was the Williams and Upham boats.
Q. What kind of boats were those?
A. They were tugs.
Q. What did they do?
A. They were in towing business.
Q. Did they go up the St. Louis River frequently?
151 A. No, not very often.
Q. How much water did they draw, do you know?
A. Oh, they drew about seven feet. That was about the draught of those tugs. And then there was the Nellie Cotton, owned by Mr. Payton, or Captain Jeffry, rather.
Q. When did that operate?
A. That operated about that time.
Q. About what time now? Fix the date as nearly as you can.
A. Oh, about thirty-five years ago they were in full swing.
Q. And how long did they operate?

A. Well, she was sold here a few years ago. She operated until Mr. Payton quit the mill business over here on Connor's Point. And then there was the tug Amethyst which came here in 1869.

Q. And who operated that?

A. Martin Wheeler was captain; R. G. Coburn and Henry Wheeler were the owners.

Q. And what kind of a tug was that?

A. She drew about six or seven feet of water.

Q. Did she operate up St. Louis River much?

A. Yes, sir, quite often.

Q. What did she do?

A. She was in the general towing business, logs and scows.

Q. Do you know which channel she used?

A. Well, they used the south channel.

Q. Used the south channel?

A. Yes, used the south channel.

Q. Now what other boats do you recall that operated on the St. Louis River prior to 1890?

A. Well, I don't remember any others particularly.

The Commissioner: Mr. Merritt, do you remember a boat
152 by the name of Stewart?

Witness: Stewart, yes. But she did not operate much up there. I guess she has been up there several times, but she did not run as a general thing up there.

Q. What kind of a boat was the Stewart?

A. The Stewart was a ferry. She was brought up here as a ferry boat between Superior and Duluth, and then she used to run in the lake mostly, between here and Agate Bay and so on.

Q. You say she did not operate the St. Louis very much?

A. Not that I know of, no.

Q. Do you know how much water she drew?

A. Well, I think she drew about six feet.

Q. Now, do you think you have named all the boats that you can recall that operated on the waters here at the head of the lakes prior to 1890?

A. Why, yes, all that I remember now.

Q. Then they were all comparatively light draught boats, weren't they, Mr. Merritt?

A. Yes, sir.

Q. Mr. Merritt, you were shown what purported to be a Meade map, Minnesota Exhibit 1. I will show you a map here that has not been introduced in evidence, and ask you if you know what that is. (Placing a map before the witness.)

A. That is a Meade map.

Q. The map that you were shown when you were being examined in chief had some red lines on it, didn't it?

A. Yes.

Q. This map has not those red lines on it, has it?

A. No.

Q. Now, you are familiar with this Meade map are you
153 not, Mr. Merritt, generally speaking?

A. Yes, sir, I am.

Q. And so far as you know, are the soundings that are given on the Meade map correct?
A. Well, they should be.
Q. So far as you know are they correct?
A. Yes, sir.
Q. You do not have any reason to think that they are incorrect, do you?
A. No, sir, not the least.
Q. And you say you were towing up above Big Island, on your operations up above Big Island were all through the south channel, except one raft of logs that was brought down from Spirit Lake and the operating that you did from Milford?
A. Yes.
Q. Is that right?
A. Yes.
Q. Now, when you went to Milford you went up a channel that we will mark; you may put a pencil mark on there, H if you will.
A. Yes, it is there.
Q. You just put a pencil mark on there to indicate that channel, will you?

Attorney-General Owen: Have you marked that map?
Mr. Gard: No, but I will.

Q. Will you put that on with red ink, so we can see it?
A. Mark it H?
Q. Yes, you can mark it H.
A. Right there.

(The witness marks as requested.)

Q. That is all right. Now, you have marked the channel on this map H, haven't you?
A. Yes, sir.

Mr. Gard: I will ask the reporter to identify this map as
154 Wisconsin Exhibit 1.
(A map of 1863, made from surveys in 1861, was marked Wisconsin Exhibit 1.)

Q. Now in going to Milford, Mr. Merritt, you went through the channel you have marked H in red ink on Wisconsin Exhibit 1, did you?
A. Yes, sir.
Q. That was the deepest water in that locality, wasn't it?
A. Yes, sir, to Milford.
Q. When you came down with your raft of logs from Spirit Lake, can you indicate the course you took, on this map?
A. Yes, I can. Take it above Milford a little ways, above where the dock was put there, I did not come down this main channel——
Q. By the main channel do you mean H?
A. I left it here somewhere. (Indicating.)
Q. By "here" you mean at a point marked—what is that?

A. There is a shallow channel in there. Do you see 8 feet marked in there? Look at it close and see if you can see it.

(Mr. Gard examines the map with a magnifying glass.)

Q. When you say you left the main channel, do you mean that you left the main channel near where the word "clay" is printed on this Wisconsin Exhibit 1?

A. Let me see. (Examining the map very closely.)

Mr. Hudson: Better locate it as the first one west of H, because there are other words "clay."

Mr. Fryberger: When he finally locates it we will put it in red, so it will be on the map.

155 A. Well, I left close to here. (Indicating.)

Q. That is where the word "clay" is?

A. Well, it is pretty close there, yes.

Q. That is, the word "clay" westerly of the red letter "H?"

A. Yes, close to that.

Q. And you left the main channel at that point?

A. I left the main channel there, and came over, straight over.

Q. Now that was when you were bringing the raft of logs down from Spirit Lake?

A. Yes.

Q. And your boat drew how much water?

A. My boat drew about seven feet.

Q. And you took the shortest line, practically the shortest line, from there down to Grassy Point, didn't you?

A. Yes.

Q. The end of Grassy Point.

A. Well, we didn't go—you see the river crooks there on what they call the Devil's Elbow.

Q. Yes.

A. Close to where the boat house is on the Wisconsin side, in the park there.

Q. You took the shortest course then down to what was then called the Devil's Elbow?

A. Yes.

Q. Now you call the Devil's Elbow, do you, that turn just above Grassy Point?

A. Yes, around there.

Q. Some other people call Devil's Elbow the turn up in the south channel, southerly of Big Island, don't they?

A. Yes; some have got it up there, but that was the original Devil's Elbow, because it was under water, kind of hid there, you know, and we caught the Devil's Elbow without any mark on

156 each side; deep water there and shallow water on each side.

(A recess was here taken until two o'clock P. M., at which time the witness was recalled, and his cross-examination resumed as follows:)

By Mr. Gard:

Q. Now, Mr. Merritt, at the end of Grassy Point, between Grassy Point and the Wisconsin shore, there appears to be represented on the Meade map, Wisconsin Exhibit 1, a white channel there, with soundings in it; isn't there?

A. Yes, sir.

Q. You knew of that channel, did you?

A. Yes, sir.

Q. That is a very deep and well defined channel around Grassy Point, isn't it?

A. Yes, sir.

Q. Do you remember the depth of it?

A. Well, it averages I think over twenty feet, something like twenty; eighteen or twenty feet.

Q. Can you look at the map and follow the figures the soundings at that point?

A. Well, I don't know as I can..

Q. You regard that white channel there, in which are marked the soundings, many of them 31 there, opposite Grassy Point, as the main channel?

A. Sure.

Mr. Fryberger: I would like to ask the counsel, and let the record appear, whether he means that question to apply to both sides of Grassy Point, or simply down towards the bay.

Mr. Gard: I am simply asking him opposite Grassy Point.

Mr. Fryberger: Down towards the lower bay?

157 Mr. Gard: I am not asking him down below anything.

A. Sure.

Q. That was the main channel, wasn't it?

A. That was the main channel, division, between the two bays there.

Q. Now you can follow that main channel up the river, can't you?

A. Yes, sir.

Q. Now you take your pencil and follow that main channel up the river.

A. Well, it shows on there, the figures.

Q. You follow that main channel up the river now.

A. And the depth of water.

Q. You can just follow the main channel now. That is up towards Milford?

A. Yes; that is where one of the channels went.

Q. Now that is the main channel, isn't it?

A. That is the main channel up to Milford, yes.

Q. Now, you have pointed out the channel, and that is marked on this map as H; haven't you?

A. Yes, sir.

Q. That is on Wisconsin Exhibit 1?

A. Exhibit 1, is it?

Q. Yes, Exhibit 1.
A. Yes.
Q. Now you give the soundings that appear on that map, in that main channel?
A. Well, I would have to change my glasses. They are marked there pretty plain.
Q. You can see they are quite deep soundings?
A. Yes.
Q. And that was quite a deep channel when you knew it?
A. Yes, sir.
Q. Now, Mr. Merritt, you spoke of a sand bar up here. Can
158 you——
A. If you mark on that map there you will see 8 feet.
Q. Now you go by the map to locate that sand bar, don't you?
A. Sure. There is an island here.
Q. You refer to the figure 8 that occurs right above the word "muddy," westerly of the letter H, don't you?
A. Yes, sir; it is right in the channel towards Milford.
Q. Now, Mr. Merritt, I will ask you if you cannot read that map and see that the main channel comes up there and the soundings are 20, 24, 15—what is that?
A. 8 there.
Q. That is 8 outside.

Mr. Bailey: 8 on either side.

Q. 8 on either side?
A. Yes.
Q. And then 14. You see 24 there, don't you?
A. I want my other glasses. (Changing glasses.) I know there was a bar across that. and deeper water above and below, when I used to run there, and I guess Meade says it too, doesn't he?
Q. Now that is what we are getting at, Mr. Merritt.
A. Now let me see. (Examining map with the magnifying glass.) I see 24. What is that—8? What are those figures there? I can't make them out.

(Mr. Gard looks at map through magnifying glass.)

Q. Now, Mr. Merritt, see if you cannot follow that channel there. It gets shallower there, but see if 14 feet is the shallowest it gets except on the sides it is 8.
A. Well, there is a bar there, showing 8 feet there.
159 Q. That is up the side of the channel, isn't it?
A. Well, that is all the water shows there in the channel; all the other marks are right there.
Q. Now you read it and assume that that 8 carries you clear across that channel, don't you?
A. Yes. That is deep water.
Q. Now don't you see that there is a lighter mark between those 8's, a lighter shading?
A. Well, I don't know. 24, and then you see it is shaded dark

there, between here and there, there is that shallow place you see; then it shows the light place in the deep channel.

Q. That light space is 27, isn't it?

A. Yes, that is deep water there; and then there is 8.

Q. The 8 is different color from the 14, isn't it?

A. Sure.

Q. Doesn't the 14 carry across there?

A. No.

Q. You are sure of that?

A. Yes.

Q. That is not the way you read it?

A. That is not the way I read it by the boat either. There used to be a shallow place there.

Q. How many times did you try to go over it?

A. Quite a number of times.

Q. How many times?

A. I could not tell. I have been on the lake there in boats, you know, when I had my own tug, over two years.

Q. You traveled the south channel most of the time?

A. I traveled the south channel most of the time, yes.

160 Q. How did it come you had occasion to try to get over that bar?

A. Well, whenever I had any work to do up there, towing some logs from the Marshall landing, used to go through there.

Q. How many times did you tow logs from there?

A. Twice, that is all.

Q. Twice?

A. Yes.

Q. Did you try to get over that bar?

A. Well, I could get over the bar all right, I could get over the bar with my own boat because it only drew seven feet of water.

Q. That bar did not hinder you then, did it?

A. No, it did not hinder me then, not when I got the right place.

Q. But you had trouble in making the right place, didn't you?

A. Well, I used to avoid that by coming down through this cut-off here.

Q. Is that the reason you came down around there, because it was hard to make?

A. The reason I did not go around this channel here was because in towing logs you have to tow them a considerable long line, and you see around that bend the logs would scrap on the rushes and the bank, and I could come right straight through here and escape that.

Q. By "that channel" you mean the channel there that is marked H?

A. Yes.

Q. And you say the reason you did not come down there with logs was that it is rounding?

A. Yes, rounding.

Q. And your logs extended quite far back from your boat?

A. Yes.

161 Q. And they would scrape the edge of the channel?

A. Yes. Suppose I had a million of logs; that would be practically three acres of stuff behind me.

Q. Extending back how far?

A. Extending a long ways.

Q. That is the reason you did not go around that main channel?

A. Yes, that is the reason I did not go there with the logs. It was a shorter cut across.

Q. You took the shortest cut to the——

A. To the Grassy point, to the Devil's Elbow.

Q. Yes, to the Devil's Elbow. Mr. Merritt, how far is it from the natural entry between Wisconsin and Minnesota point to the rapids of St. Louis River?

A. It is about 22 miles.

Q. And how far is it to the trading post that was called Fond du Lac?

A. Well, it is close to 20 miles.

Q. What do you estimate the distance from? How do you get that?

A. Well, I measured the time going up with the tug; that is the first time I measured it, and I have tried to measure it with calipers on the Meade map.

Q. Is that by way of the main channel?

A. No.

Q. By the cut-off?

A. That is by the cut-off.

Q. The channel south of Big Island is called the cut-off, isn't it?

A. Yes.

Q. That has usually been known as the cut-off, hasn't it?

A. Yes, a short-cut.

Q. The people who have boats that can navigate that channel usually take that cut-off to save the distance, don't they?

162 A. Yes; more particularly before the government main channel was dug up; I mean in the other years, in the years back; took that to save time and trouble.

Q. Mr. Merritt, I believe you said you testified in the Whiteside case?

A. Yes. I don't know whether the Whiteside case or not; I testified something about an island up there; I don't know whether Mr. Whiteside was interested or not.

Q. Yes. You know that there has always been a current down the St. Louis Bay and the Superior Bay and the St. Louis River?

A. Sure, there has always been a current and a tide.

Q. Yes. By "tide" you mean the raising of the water from the wind?

A. Yes.

Q. The northeast wind?

A. Yes, from the lake; there is a tide in the lake; there always used to be, anyway, from 6 to 9 inches.

Q. Do you understand that is a tide from the tidal causes, I mean

by the effect of the sun and moon, or do you mean that it is a tide from the effect of the wind?

A. Well, there is a tide even in still weather. The government bureau shows that. A tide from six to nine inches quite often.

Q. Do you understand that to be from the tidal causes? By tidal causes I mean the influence of the sun and the moon.

A. Well, I don't know anything about it. I know there is a tide, that is all.

Q. You don't have——

A. I don't have an idea what causes it.

Q. You never investigated that?

A. No.

Q. But you do know that there is a raising of the water in the lake at this end of the lake, a raising and falling of the water
163 periodically, and that that extends up the river some distance?

A. Yes, sir.

Q. It extends up to Fond du Lac you testified?

A. Yes, I testified, but that was really caused by a northeaster, or I have seen the tide rise in still weather, but a northeaster came right afterwards.

Q. That tide simply has a tendency to back the water up and still the current, doesn't it?

A. Yes, sir.

Q. Sometimes the current is the other way?

A. Yes.

Q. But the main current is down the river?

A. Sure.

Q. And that is very marked, isn't it,—the current down the river?

A. Yes, it is; and the current down the south shore too, follows it down the south shore in Lake Superior.

Q. The current follows the main channel down the river, doesn't it, usually?

A. Yes, sir, and also the bay too.

Q. Yes, and in the bay?

A. Yes, and in the bay.

Q. It follows the main channel out through Superior Bay, doesn't it?

A. Yes, sir.

Q. And there is a well-defined channel out through Superior Bay, isn't there?

A. Yes, sir.

Q. And always has been?

A. Always has been.

Q. And that channel comes down through Grassy Point into St. Louis Bay a distance, doesn't it?

A. Yes, sir.

Q. And then you understand that it continues through St. Louis Bay, or not?

A. The channel?

164 Q. Yes.

A. It flattens out there.

Q. And then picks up over near the Minnesota shore, above where the Northern Pacific bridge now is, does it?

A. Yes, sir.

Q. And that is a well-defined channel over there, isn't it?

A. Yes, sir.

Q. At the Minnesota side of the St. Louis Bay, where the Northern Pacific bridge now is?

A. Yes.

Q. Isn't that right?

A. That is right.

Q. Now, Mr. Merritt, you testified that the characteristic of a lake as distinguished from a river was the widening, didn't you?

A. Yes, sir.

Q. You consider that the principal characteristic that distinguishes a lake from a river?

A. Why, yes, I should say so; that is, it is like Lake Peppin; the widening of the river makes Lake Peppin; and the widening of the St. Louis River from the island down makes upper St. Louis Bay, and so on, St. Louis bay, and Superior bay.

Q. Now, don't you think a well-defined channel and current has a good deal to do with determining the river?

A. Why, in the river it does, but in the bay I do not see why it should be. There has always got to be a deeper place in a bay, unless you make it exactly flat, but when you come to navigate, you navigate, according to your vessel, in the deepest place in the bay or lake.

Q. You understand the channel out there near Minnesota Point, just inside the natural entry, to have been made by scouring
165 of the current, don't you?

A. Why, I suppose so. That is deep water right close to Minnesota Point and is shallow over at Superior.

Q. Yes; and you understand that to have been made by the scouring of the current?

A. Well, I could not tell that in particular. The left-hand comes in over there. The current used to make a bar over at the end of the lake, the old Superior entry; when we had high water we used to get a bar there.

Q. Yes. That is right in between Minnesota and Wisconsin Points, isn't it?

A. Yes, out in the lake.

Q. That sometimes was not more than 8 feet across there; was it?

A. Yes, quite often. We had a main channel where the old lighthouse is, we used to have to come in there and then go southeast; there was a bar outside.

Q. You have that natural entrance marked as mouth of the St. Louis River on a number of maps, haven't you?

A. Why, the entry of Superior Bay, I don't know whether it is the mouth of St. Louis.

Q. Have you not seen it marked on several maps as the mouth of the St. Louis River?

A. No, I have not. It may be on Meade's map for all I know. Used to also call it the Superior entry.

Q. Yes; that is to distinguish it from the Duluth entry, isn't it?

A. Well, that is Duluth canal.

Q. Yes, you call that the Duluth entry, don't you?

166 A. Yes. But we called it Superior entry when I was a boy, when we came in with the steamer Manhattan.

Q. Didn't you say you went up the St. Louis River when you came in?

A. No, went to Superior Bay and then to St. Louis Bay.

Q. When you spoke of regarding that line in the center of the map, or that line in the center of the bay as the state line, you based that on your belief that Superior Bay and St. Louis Bay is not a part of St. Louis River, didn't you, but a part of Lake Superior?

A. Well, no, I can't say as I did. I call them St. Louis Bay and Superior Bay.

Q. And you based that being the boundary on the fact that they are a bay, a part of the lake and not a part of the river, didn't you?

A. Why, sure.

Q. Yes.

A. Sure.

Q. And you regarded them as a bay and as part of the lake instead of a part of the St. Louis River?

A. We did not call it St. Louis River, no; we called it the bay, Superior Bay, and the upper and lower St. Louis Bay.

Q. Yes. Now, Mr. Merritt, you spoke of the Lefthand River. What do you mean by the Lefthand River?

A. Well, that is to the lefthand. The old Jesuits came in there and gave it the name Lefthand; that is the river to the left, named Nemadji.

Q. Nemadji means lefthand?

A. I don't know.

Q. It used to be called Nemadji or Lefthand River?

A. Yes.

167 Q. Now you heard that Nemadji means lefthand?

A. Well, I suppose it does, still I never saw the authority. Does it mean lefthand?

Q. Well, I understand it does.

A. But I am cross-examining you.

Q. Yes, I understand it does, Mr. Merritt.

A. Well, all right.

Q. And you spoke of it as being the Lefthand River?

A. Yes, sir; sure.

Q. Now, Mr. Merritt, when we have a lefthand river we usually have a righthand river too, don't we?

A. Sure.

Q. Where is the righthand river?

A. Up above the island there.

Q. Do you think that the old settlers, when they named that Nemadji River as distinguished from some other river which was

the righthand river, considered that the St. Louis River did not begin right there at the entry?

A. Why, I think so. I think they did not, or else they would not have named St. Louis Bay after St. Louis.

Q. That is the reason you think so?

A. Yes, I think so. Superior Bay.

Q. Doesn't it occur to you where there is a lefthand river there must be a righthand river, somewhere right there, to distinguish the one from the other?

A. Why, it is practically right there, only just a little ways up the two bays, the three bays there.

168 Q. Where you fix the mouth of the river is several miles, isn't it?

A. Sure.

Q. How many miles?

A. Well, it is seven miles—well, it must be about—seven and five are twelve—twelve miles anyhow.

Q. Did you notice, Mr. Merritt, that there are two sections to the Bayfield map, one of them called survey of Lake Superior; isn't it?

A. Yes, sure.

Q. And the other one is called what?

A. I never saw this other one, you know.

Q. Well, what is it called? You have it before you. It is called Track survey of the River St. Louis, isn't it?

A. Yes.

Q. By this man Holland, under the direction of Bayfield; isn't it?

A. That is what it says.

Q. Now, that shows the water out to the natural entry there, doesn't it?

A. Sure.

Q. Now, don't you understand that Mr. Bayfield considered that water a part of St. Louis River?

Mr. Bailey: That is objected to as to what he understood Mr. Bayfield considered. Mr. Bayfield made the larger map that is marked Lake, and it takes in all now that you are claiming as a river.

Mr. Gard: I am cross-examining this witness now. He doesn't need you to help him out.

Witness: I don't want him to help me out.

Mr. Bailey: That was not a proper question.

Witness: This Superior Bay and St. Louis Bay here was a bay before this man made the survey.

Q. What you call a bay, you mean?

A. Yes.

169 Q. Do you know of anybody calling them bays before that time?

A. I think if you will look over John Cass' report you will find he went to Fond du Lac—when was this survey made?

Q. In 1823 and 1825, I think.

A. Cass was there in 1822.

Q. Now, Mr. Merritt, don't you often find that a river is given a local name of something like a bay and still it remains a river?

A. Well, I don't know of that.

Q. Do you consider that the Mississippi River does not continue through Lake Peppin? You spoke of Lake Peppin.

A. Yes.

Q. It is your understanding that the Mississippi does not continue through Lake Peppin?

A. That is not the end of the Mississippi, sure.

Q. Is it your understanding, though, that the Mississippi River does continue through there, or not, or that it loses its character or its identity?

A. Its identity.

Q. Yes. And there is no Mississippi River through Lake Peppin? Now what is your understanding?

A. Well, I would say that it was not the Mississippi through Lake Peppin.

Q. That is your understanding?

A. It enters into Lake Peppin from the north and empties out of Lake Peppin at the south—the same river.

Q. And on that same theory you consider that Superior Bay and St. Louis Bay is not a part of St. Louis River?

170 A. Yes, I should say so. What is that marked? Fond du Lac Bay?

Q. Lake Superior.

A. On the old Bayfield map it is marked Fond du Lac.

Q. Yes. What does that mean?

A. Well, the head of the lake.

Q. Don't you conclude that Mr. Bayfield considered the head of the lake just outside of Minnesota Point where he put Fond du Lac?

A. Well, in his——

Q. Now wait. Answer the question.

Mr. Bailey: Let him answer.

Q. Answer the question.

A. What is the question?

Mr. Gard: Read the question, Mr. Reporter.

(The question was read by the reporter.)

A. I consider he did, yes, sure; Fond du Lac, that is outside of Minnesota Point.

Q. Yes. And you think he must have considered that the head of the lake, don't you?

A. Yes, I think he did, when he entered into Superior Bay.

Q. Yes.

A. Sure.

171 Q. You considered this, then, not an authentic copy of Bayfield map?

A. Well, on the original Bayfield map it was marked "West of the Apostle Islands Bay of Fond du Lac."

Q. Where is that map?

A. In London; I understand they have a copy of it in London and

I tried to get a copy to keep as a relic and they have them on file in London but I couldn't reach London.

Q. Don't you understand that this is an authentic copy of the Bayfield map?

A. Why, as far as that is concerned in the original Bayfield map they had the Bay of Fond du Lac——

Q. How do you know that you saw the original Bayfield map?

A. Well, I saw it in 1863, '64, on board the old schooner Pierpont, Captain Edwards showed me, and I saw the name of Bayfield marked on it. It looked to be a map which had been used ten or twelve years then and there was no question in my mind that it was the original Bayfield map.

Q. You mean a copy of the original map?

A. No. One of the original Bayfield maps.

Q. You don't mean it was one that Mr. Bayfield made himself?

A. Yes, sir.

Q. You mean it was from engraving?

A. Yes, sir.

Q. It was an engraved map?

A. Sure; just the same as that Meade map is.

Q. Do you undertake to state positively that the whole end of Lake Superior beyond the Apostle Islands was marked "Fond du Lac Bay"?

A. Fond du Lac Bay.

Q. Do you undertake to make that as a positive statement?

172 A. Positive statement.

Q. And you never saw that map but once?

A. I sailed with it for a number of years.

Q. When was that?

A. From '64.

Q. About what time?

A. The last time I was on the old schooner was in '66—I quit her the spring of '68 and went to run the tug Agate.

Q. Were you using the Bayfield map all the time.

A. Sure. There wasn't any other map to use.

Q. When did the Meade map come out?

A. The Meade map came out in '66. We didn't have it in '66. I didn't get the Meade map until about '69 was the first Meade map I got.

Q. Did you sail by the Meade map after that?

A. Sure.

Q. Now you are shown Minnesota's Exhibit 13. You testified that that was a generally recognized and correct map, didn't you?

A. Yes, sir.

Q. Do you see that the mouth of St. Louis River is marked at the entry between Minnesota Point and Wisconsin Point on that map?

A. Yes, sir, I see that.

Q. It couldn't have been generally accepted, then, that that wasn't a part of the St. Louis River down to the entry, was it?

A. A man would be called crazy to talk about the Superior Bay being the St. Louis River.

Q. That is the way you look at it?
A. Sure.
Q. You don't regard that channel that you spoke of as having any tendency to make it a river?
173 A. Except the deeper part of the bay, the Superior Bay.
Q. That is you do, you do think it has a tendency to make it part of the river in the deeper part of the bay?
A. No, I didn't say that, but the deeper part of the bay——
Q. Do you or do you not consider that that channel that you spoke of is an evidence of a river?
A. I don't see how it could be river in a bay.
Q. You don't because it's called a bay, is that it?
A. That is the name of it.
Q. Isn't that the reason you think it can't be a river, because it's called a bay?
A. I don't see where the river comes in there.
Q. You spoke of the channel and you say that you don't find any evidence of a river in that channel?
A. There is a channel in Lake Superior—deeper part of Lake Superior must be a deeper part of the bay.
Q. Do you find a channel in Lake Superior that was made by scouring of the water?
A. Some fellows say it was a glacier but I wasn't there; I don't know.
Q. Do you find a channel in Lake Superior that was made by a scouring of the waters?
A. I am not an expert on scouring.
Q. You did testify that you had no doubt that that channel out near the end of Minnesota Point in St. Louis Bay was made by the scouring of the water, didn't you?
A. No, I didn't. You wanted me to testify to that and I said I didn't know.
Q. Do you know how it could have been made if it wasn't made by the scouring of the water?
A. I am not an expert on that. I know it is deep water
174 close to Minnesota Point.
Q. And you know that the current runs down there too, don't you?
A. Sure, runs up too.
Q. When the tide comes in?
A. Yes, sir.
Q. But you know there is more water runs out than runs in, don't you?
A. Got to be.
Q. And you know that the general trend of the current is out—that current?
A. Sure it's out. Got to go by that point.
Q. How near up to Oneota did that main channel that you speak of that runs up between Rice's and Connors Point near the Minnesota shore above where the Northern Pacific bridge is now, how near did that run up to Oneota?

A. Well, the deep water that we used to run the vessels from Oneota down ran out, well a straight line from the old Oneota dock, the Erie pier, from the Erie pier to where the Northern Pacific, by Zack Brown's house, would cut off a portion of the Missobe & Northern docks, a straight line between.

Q. The deep water, you mean?

A. Yes, the deep water on that side of the bay.

Q. And Meade's map shows the correct depths of that water, doesn't it, so far as you know?

A. Yes, it shows——

Q. All over the bay?

A. All over the bay showing on the south side a little deeper channel than there is on the north side. That is, you can pick it out on the Meade's map there. It shows you there.

Q. Do you remember when the Northern Pacific bridge was built?

175 A. Yes, sir, I do.

Q. Was there two draws put in that bridge when it was first built?

A. No, no.

Q. Where was the draw put in that bridge when it was first built?

A. Near Rice's Point.

Q. On the Minnesota side?

A. On the Minnesota side, yes.

Q. Where the draw is now on the Minnesota side?

A. Well, seems to me they moved the draw, but I don't know. Pretty close there, yes. Must be close there.

Q. Pretty close?

A. Yes.

Q. Do you know why they put the draw in the Minnesota side and didn't put a draw in at the Wisconsin side?

A. Well, there wasn't anything over in Wisconsin then, any call for a draw over there, and on the Minnesota side they wanted to get to the docks, close in there, and railroad docks, the railroad land they owned up alongside of Rice's point.

Q. You know, don't you, that the Government wouldn't let them bridge the main channel of the St. Louis River without putting a draw in?

A. Sure.

Q. And you know, don't you, that that was considered the main channel of the St. Louis River at the time the Northern Pacific bridge was put in?

A. That was the deep channel of St. Louis Bay.

Q. And that is the reason that they put the draw over there and not on the Wisconsin side, wasn't it?

A. Why, of course that was the reason, because the Government ordered it there.

176 Q. How long did that bridge exist with just one draw?

A. Well, I couldn't tell. I don't just remember. When they come to want to use the Superior side there they got a new draw and then changed that, I guess.

Q. Mr. Merritt, you testified that there was a dock at Millford, didn't you?

A. Yes.

Q. And that you couldn't go in and get the lumber at the dock, as I understood you?

A. No. There was two docks there, one in by the mill and one outside in the deeper water and they used to scow the lumber out the dock.

Q. Did that dock out in deeper water extend to the shore?

A. No, no.

Q. Didn't extend to the shore anywhere?

A. No.

Q. Was just——

A. Just a pier out there.

Q. Just a pier outside and water all around it?

A. Water all around it.

Q. How far out was that from the shore?

A. I don't know exactly how far; it was quite a little ways. The Meade's chart I don't know whether it shows the dock or not but it was practically a quarter of a mile out.

Q. Mr. Merritt, the water of St. Louis is colored, isn't it?

A. Yes, sir, it is what we call tamarack water, muskeg color, except in the winter.

Q. Before the Duluth Canal was cut across Minnesota Point you could see that water extending out into the lake some distance, couldn't you?

A. Oh, yes, you could see it a long ways out, so far as
177 that is concerned when the "Left Hand" was on a boom and the St. Louis River was on a boom.

Q. You could see the current extending out there into the lake there some little distance, couldn't you?

A. Yes, sir.

Q. From the St. Louis and the Left Hand River?

A. Yes.

Q. And the St. Louis River is much larger than the Left Hand River?

A. Well, sometimes the Left Hand gets awful high, you know. It's a larger river.

Q. Very much larger, isn't it?

A. Yes; drains more territory.

Mr. Bailey: Which is, St. Louis?

Mr. Gard: St. Louis.

The Commissioner: What year was the canal dug in Duluth here?

The Witness: '71—'70 started it there.

Q. You spoke of the St. Louis River being narrow above Big Island. Isn't there several widenings of the St. Louis River above Big Island?

A. It goes off, as you come from Fond du Lac this way, there is a lake in there near Fond du Lac, and what they used to call

Andrew Reefer's Bay. That was to the north. And then as you came down this way there was Lord's Bay. That was on the Wisconsin side. And then immediately across from that was Sargent's Lake, and then Mud Lake; I don't know whether they named that on the map there, but that was the name.

Q. Did you consider those waters a part of the St. Louis River or not?

A. We called them bay, Lord's Bay and Andrew Reefer's Bay.

Q. Did you consider them a part of the waters of the St.
178 Louis River or not?

A. They were not the main river. They were set off one side.

Q. Did you consider them a part of the waters of the St. Louis River?

A. Why, no I wouldn't consider them—I would consider them separate bays. Of course, they were from the waters of the St. Louis River, no doubt, of the St. Louis River water, and like Spirit Lake after that, coming through there. There was an outlet below but no inlet.

Q. You didn't consider them a part of the waters of the St. Louis, did you?

A. Part of the waters of the St. Louis River, No.

Q. The Little Pokegama Bay, you don't consider that to be part of the waters of the St. Louis River?

A. No.

Q. And Mud Lake, you don't consider that part of the water of St. Louis River?

A. No. When we get to those we always get out of the river.

Q. You mean you get out of the channel of the river?

A. Channel of the river and out into the bays.

Q. There was a channel of the river that you tried to follow, was there?

A. Yes, sir.

Q. Mr. Merritt, you said Mr. Stuntz told you that he went up the St. Louis River just as far as he could before he started to survey the State line between Minnesota and Wisconsin southerly of the St. Louis River, didn't you?

A. Yes.

Q. He said he wanted to get all the territory he could, or something like that, from Wisconsin?

A. That's what he said in a kind of a joking way. I don't know whether he meant it or not.

179 Q. Did you understand that he had anything to do with your brother's making the map of——

A. No, not as I know of.

Redirect examination.

By Mr. Bailey:

Q. Do I understand you to say that through lower St. Louis Bay there was a line of water deeper along the Wisconsin side than any line along the Minnesota side? Did I so understand you?

A. Well, it shows that way in Meade's map there.
Q. Do you understand that to be the fact?
A. Yes, I understand it to be the fact, yes.
Q. Now you and Leonidas, your brother, were interested in the construction of the original Duluth, Missable & Northern docks, were you not?
A. Yes, sir.
Q. That show on this Exhibit 3 as being constructed along the northerly side of lower St. Louis Bay?
A. Yes.
Q. Did you at the time of that construction have any idea or had you ever heard that Wisconsin claimed anything more as far as that?
A. No, sir, we did not.
Q. You are not interested in these docks at the present time?
A. No.
Q. And had no interest in this case?
A. No interest in this case.
Q. Now calling your attention to Exhibit 3, counsel asked you about bringing a raft of logs down. You said that in bringing that down from up by Fond du Lac somewhere near where you got about to the point C, you took the line marked C and B and G and E and A?
A. Yes.
180 Q. And in so doing did you follow the main navigated and navigable channel?
A. Yes, we did for the boats that went up this way (indicating). We never went around that way.
Q. I say, when you brought these logs down in following that line did you follow the main navigated and navigable channel?
A. Yes, sir, I did.
Q. Now you told me this morning something that I overlooked calling your attention to. Were you out at Oneota at the time that the Government surveyors were surveying the bays there?
A. Yes, sir.
Q. What year was that, if you remember?
A. That was in the year '60.
Q. Did these men who were doing that work for the Government——
A. You mean the Government survey?
Q. Yes.
A. Oh, that was in the winter of '56 and '7.
Q. Did the Government surveyors who were doing that work stay at your house?
A. Yes, sir.
Q. Were there while they were doing the work?
A. Yes, sir.
Q. Did you hear any remarks made by them with reference to the character of these waters? Just state what you heard?

Mr. Owen: Objected to as hearsay.
The Commissioner: Go ahead and answer the question, Mr. Merritt.

A. Why, I heard F. A. Buckingham, who was one of the chain men, and the fellow by the name of Leander Palmer, brother of these other Palmers, was the chainmen, and I heard them say they had just got done meandering the upper St. Louis Bay and
181 calculated finish these up as they go along.

Q. Do you know what waters they were referring to as upper St. Louis Bay?

A. Up around Millford in that country.

Q. The same territory that you have described?

A. Yes.

Q. Counsel spent considerable time with you this morning asking you what boats you knew of that ran up these waters in the early days. I don't know whether you have mentioned the Lottie Bernard. Did you know of such a boat?

A. Sure I knew her. I didn't mention the Lottie Bernard and I didn't mention the Stillman Witt and I think another boat, the Spirit.

Q. The Lottie Bernard was operated by the Howards, was it not?

A. Yes, Mr. Howard, the elder Howard.

Q. Does that look familiar to you, this exhibit, Minnesota's Exhibit 4?

A. That's her all right.

Mr. Hudson: Which is that one?

Mr. Bailey: Exhibit 4, Lottie Bernard. (Counsel examines photograph Exhibit 4).

Mr. Fryberger: Emerald.

A. She looks like Lottie Bernard. It's a side wheel boat.

Q. Do you remember this boat, the Emerald?

A. No, I don't remember her; I just seen her once in a while.

182 B. F. HOWARD was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Your name is Benjamin F. Howard?

A. Yes.

Q. And you reside where?

A. Howardville, Manitoba.

Q. How long have you lived there?

A. Since about January 1st, 1913.

Q. What business are you engaged in, Captain, at the present time?

A. Well, lumbering and farming and fishing.

Q. That is fishing on what lake?

A. Tug boat.

Q. On Lake Winnipeg?

A. On Lake Winnipeg, yes, sir.

Q. You run a boat, gather up fish there?

A. Yes, sir.
Q. Also farming and also lumbering?
A. Yes, sir.
Q. You have some grown sons also in business?
A. Yes, sir.
Q. Where were you born, Captain?
A. Born in Sandwich, Massachusetts.
Q. What year?
A. In 1852.
Q. You are a brother of John Howard, John G. Howard, who testified on the witness stand?
A. Yes, sir.
Q. What was your father's name?
A. John D. Howard.
Q. What was your father's business in an early day before he came west?
A. He had a merchant tailoring establishment in Sandwich, Massachusetts. He sold it out and moved the family up to Newport, Vermont, in the early part of 1856.
183 Q. When did your father come west?
A. In 1856 he left us at my aunt's in Vermont while he came west.
Q. You say left you at Vermont, your mother and the other children?
A. My mother—that was before John was born. John was born there.
Q. Where did your father go to?
A. He went to Superior, Wisconsin.
Q. How long after did his family join him there?
A. It was about July 1st, 1857.
Q. You said you were born in 1852?
A. 1852.
Q. You were five years old. How did you come up to Superior?
A. We came from Newport, Vermont, to Detroit, Michigan, by rail. We then got on the Steamer North Star, sailed by Captain Sweet and landed here in Superior.
Q. In 1857?
A. Yes, sir.
Q. What business was your father engaged in at that time?
A. Previously to moving the family up there he bought out a mercantile business situated on Second Street, Superior, owned by Ray & Markell.
Q. That is Clinton Markell that used to live here and Ray that used to live here, they moved over from Superior, did they?
A. Yes, sir.
Q. Mercantile business——
A. Mercantile business and a small sawmill on Connors Point.
Q. Is that located on what has been called here Howard's Pocket?
A. Well, the mill, of course, was on Connors Point and the
184 slide where the logs came up ran in to Howard's Pocket.
Q. Howard's Pocket is the same as it is shown on these maps as Howard's Bay, is it not?
A. I don't know; I suppose so.

Q. There is only one Howard's Pocket?

A. That's the one right opposite the ship yards.

Q. It is on Connors Point between the main land of West Superior and Connors Point?

A. Yes, sir.

Q. Did your father then start in the lumbering business?

A. Yes, sir.

Q. How long did he continue in that business; about how long—not so particular about the dates?

A. Oh, we cleaned up along in the '80's somewhere.

Q. Did you commence working for him in the lumber business?

A. Just as soon as I was old enough.

Q. Well, about when was that?

A. Well, it was along in the last days of the Civil War.

Q. Along the latter part of the Civil War?

A. About '65 or '66.

Q. Where did you lumber and log?

A. Well, along the bays, the St. Louis, the shores of St. Louis Bay and we cut some logs on the Minnesota side over around Millers Creek, up the bay from there; and then as fast as we got these cut off of the lands he owned on the Wisconsin side of St. Louis Bay we kept moving up until we got them in the Big Pokegama.

Q. On the Wisconsin side?

A. On the Wisconsin side, yes, sir.

Q. Did you log any from the Minnesota side?

A. Yes, sir.

Q. How in the early days in the early start did you get your logs down from where they were cut or placed in these bays
185 down to the sawmill at Connors Point—Howard's Pocket?

A. He used to pole them down.

Q. I wish you would explain a little. I would like to have the record show how that was done?

A. Well, in those days a man generally went into a logging camp with one yoke of oxen and a small logging outfit of may be two or three men. A man that cut a hundred thousand feet of lumber was cutting a pretty fair winter's work.

Q. A hundred thousand feet of logs?

A. A hundred thousand feet of logs. This mill that we had to stock was a mill of the capacity of about 2500 feet a day. It was one of these up and down saws and it was a good day's work if you cut 3,000 feet, and it didn't take a terrible lot of logs to stock it. These men would go up there on these points with a yoke of cattle and they would take their irons for the sleigh and make their sleigh up there. When it was worn out they always left them; just took the irons off and brought them down. These banks were pretty high and they would haul both sides of these little ponds, make little rollways and part of these logs would go out on to the ice; then the last thing they done they cut the boom sticks out of pretty good sized timber, and string them around on the ice outside of this rollway and then they went to work and made what we called in those days a thorough-shot boom.

Q. Explain that, if you will?

A. Suppose this was a round log that you cut in back here two feet or so (indicating), and then hew that piece out on that side, depending on the distance through here (indicating), as to
186 the size of the timber which they had to use. Of course the top end they wouldn't cut in as far as that. Then we used to take an inch augur and bore a hole through that. Then they had another augor that we called a boom augor which was about that high, I should judge. (Indicating).

Q. About four feet high?

A. I should judge that. And then there was a round hole in the top of that. We put a hand spike through. Then down below that, away down within six inches of the end, there was a hole cut through and a bit put through that, and then there was about six inches of a screw on the end of that, just a little larger than this six-inch hole, and we screwed that into this six-inch hole and we would pull this bit down through and we cut a hole in an upright about four inches in diameter.

Q. How would you turn that screw?

A. Turned it with two men and a hand spike through this hole.

Q. You had no boom chains like they have nowadays at all?

A. No, sir, never saw any till the fellows came up from Michigan. Then we cut this plug, usually grubs, and was rounded six inches from the root, and hewed them down until they fitted these holes easy and then put a pin through the top or two pins, usually; if one broke the other would hold. That made what was called a thorough-shot boom. That made a boom that a man could walk all around on, when they couldn't on a chain boom. We made that boom on the ice and as soon as the ice went out we rolled these logs into this boom and turned the two together and tied it up there and it was ready for transportation to the mill.

187 Q. How did you get this circular or rounding location of the boom sticks?

A. These timbers being put through that way (indicating), they would turn on this thorough-shot.

Q. The boom sticks lay on top—one on top of the other and not parallel with the water?

A. Then they would roll up and take a twist, you could twist them anyway you wanted to.

Q. In that way you could walk on these boom sticks and pole in a way that you couldn't pole a boom constructed with chains?

A. Yes, sir.

Q. Now how did you bring these rafts down to the mill. Just explain that polling a little more definitely?

A. If we wanted to go off that way (indicating) we would roll our raft around that way. If we wanted to pole that way (indicating) we would roll it the other way. If we was getting them straight we would poll it both ways.

Q. What did you do with reference to keeping a rope on land, if anything?

A. We only kept a rope on land like striking the ends of these

points along. If we could get a good pull there we would help ourselves across the mouth of these slips. Lots of it we couldn't put a rope.

Q. When did you have charge of bringing these rafts down?

A. I didn't have particular charge of it. I was a boy. My father would send me up with some men. There was no particular taking charge.

Q. Did John start in when he was a small boy?

A. He started in after I did. He was four years younger than I was.

188 Q. How long did you keep up poling these rafts down?

A. I think that the first raft that we had towed down was towned down by the Agate in '68, if I ain't mistaken, either '67 or '68.

Q. Prior to that time you poled them down?

A. Yes, sir.

Q. Now, Mr. Howard, as a boy where did you spend your time when you weren't working, with reference to hunting and fishing?

A. Whenever there was any hunting and fishing we was allowed—any time to hunt and fish—we used to go up St. Louis Bay and River.

Q. Did you spend a good deal of time up the St. Louis Bay as far as Fond du Lac hunting and fishing?

A. Yes, sir.

Q. Did you become very familiar as a boy with all these bays up as far as Fond du Lac?

A. Yes, sir.

Q. Duck hunting——

A. Duck hunting and then we used to hay up to Le Garde meadow, hunt and fish evenings.

Q. Did you bring hay down on the boat?

A. Yes, sir.

Q. What was your earliest experience in running a boat yourself?

A. My earliest experience was on the Lottie Bernard.

Q. When did your father get that boat?

A. I think it was in 1869.

Q. And did you commence to run the boat at once?

A. I went right aboard of her. I was on it as long as he owned her.

Q. Had you any experience prior to that time in navigating a boat?

A. No, sir—that is, not a steamboat.

Q. Did you run a sailboat?

A. Lots of sailboats.

Q. Up around the bay?

A. Up around the bays and rivers.

Q. When did you get your captain's license?

189 A. I think I had my first issuance of papers from Freeman Fitzgerald in '71.

Q. To get your license did you pass an examination as to your knowledge of Lake Superior waters or all these bays tributary?

A. Yes, sir.

Q. Did that include all the bays up as far as Fond du Lac?

A. I can't tell you what the questions were, at this time.

Q. Was it necessary for a pilot, in order to get a license, to have knowledge of all these bays and Lake Superior?

A. Yes, sir.

Q. And your first license was issued to you in 1871?

A. That is my recollection, yes, sir.

Q. How long did you continue to have a license from that time on?

A. I have had one ever since. I have an expired copy now in my pocket.

Q. Before you left for Canada you had a license——

A. I had a license all the time between the expiration of my license in 1872 and the reissuing in, I think, 1890, I am not positive about that.

Q. These licenses run for five years?

A. They do now. At that time they ran for one year.

Q. When you got the Lottie Bernard what did you do? Just tell us in your own language what you did with the boat, what your duties were and where you ran it?

A. I went aboard and I wheeled on her.

Q. To start with?

A. To start with.

Q. Who was captain at that time, or master?

A. The first man's name was Wilson.

Q. And you were wheelsman?

190 A. I was wheelsman under Captain Wilson.

Q. How long were you wheelsman, about how long?

A. About two years.

Q. Where did the boat run during all this time?

A. When we was outside we used to carry lumber to Port Arthur and Silver Island.

Q. From where?

A. From his mill at Superior.

Q. When you say "outside" you mean outside the Superior entry, into the lake?

A. Outside the Superior entry, yes, sir.

Q. From this mill?

A. Yes, sir.

Q. When you were inside where did you run?

A. We used to go up the St. Louis Bay and River and tow logs and run excursions, whatever we could do.

Q. How long did you run that boat as master?

A. I never was master.

Q. Did you ever run the boat yourself?

A. Yes, sir, I ran the boat myself. I was mate of it two years.

Q. You were mate of it?

A. Yes, sir.

Q. Where did you run the boat?

A. When we went up the St. Louis River there would be lots of times we didn't have a master. I used to take her up and handle her.

Q. Now, were there any boats from that time on different craft, sailing craft, steam craft, navigating these waters at the head of the lakes?

A. Yes, sir.

Q. And I will ask you whether or not these lake men discussed all these different matters the way water men do, as to channels and harbors and so on?

A. Yes, sir.

191 Q. Were you thoroughly familiar from the time, we will say from 1870 on, with the channels of St. Louis Bay and Lake Superior?

A. Yes, sir.

Q. Now do you know where the other boats as well as your own boat ran as a general thing?

A. Well, we would see that where they ran, yes, sir.

Q. Captain, I show you Minnesota's Exhibit 3 and I ask you if you recognize that as the harbor of the head of Lake Superior including upper and lower St. Louis Bay and Bay of Superior?

A. That is a chart of it, yes, sir.

Q. Now, I want to call your attention to upper St. Louis Bay. What did you understand was lower bay and what upper St. Louis Bay?

A. Well, I understood that St. Louis Bay was divided into two pieces by Grassy Point and that the upper St. Louis Bay was all that between Grassy Point and Big Island or Heugier's Island, as they called it. He used to live there. He was a Frenchman that lived on the island.

Q. That was upper St. Louis Bay and——

A. From Grassy Point to Rice's Point was the lower St. Louis Bay.

Q. Where did you understand and where was the common understanding, I might say, of the mouth of the St. Louis River? Where did the river end and the bay commence?

A. We always considered that the St. Louis River—we got into the St. Louis River when we got above Big Island.

Q. Got above Big Island at the separation of the two channels?

A. We was in the St. Louis River.

192 Q. What were the characteristics of these waters, of these two bays, upper and lower St. Louis Bay, with reference to whether they had the characteristics of river waters or bay waters, lake waters?

A. All these big ponds in here and everything made a bay out of this thing here—we always thought so.

Q. You point to upper St. Louis Bay?

A. Yes.

Q. And lower St. Louis Bay the same?

A. Same way.

Q. What about the shores? Were the shores of this bay like

rivers, shores or banks of rivers, or shores of rivers, or were they greatly indented?

A. Greatly indented, more like the shores of bays, this part particularly.

Q. What was the character of the banks of these bays?

A. The Wisconsin shore was high and steeper a good deal than the Minnesota side excepting right along by Oneota.

Q. Now I want to call your attention to the channels marked on this map Exhibit 3 and ask you to state what the usual route or travel of the vessels during all the time prior to the time there was any dredging done that you were familiar with this bay, starting at Grassy Point and going up towards Fond du Lac?

A. Those lines had to go from C. to B. and down to A. That's very close to where they used to stake out the channel there for the north channel by to get to the St. Louis River.

Q. That is, you say, the north channel, that is the channel that went to the northerly of Big Island as shown by this map?

A. Yes.

Q. When you wanted to go to the south channel or
193 through the south channel your route from A to B was the same?

A. Very close.

Q. I call your attention to the part of this map that shows deep water in a hole running from the point marked G on the map under what is known here as the Carnegie Coal Dock and another one marked "Coal Dock" which is now the Zenith Furnace, I think. I call your attention to a point marked H. I want to ask you whether or not you ever used that in taking either channel in going up the St. Louis?

A. Never did.

Q. Did you know of any boats doing it?

A. Not to my knowledge.

Q. Did you ever see any boats in there other than those going to Milford?

A. Never did.

Q. Was that used, this deep hole which is marked H, for any other purpose by navigators excepting for the purpose of going to Milford to get lumber?

A. Not to my knowledge.

Q. How did the boats get that lumber that was sawed at Milford?

A. Sailing vessels used to go up there and load part of the cargo, George M. Ford and George R. Fetter, and the old Neptune and sometimes the Pierpont.

Q. Was that a sailing vessel too?

A. Yes, the Pierpont was the larger of the lot; the George M. Ford and the George R. Fetter, were boats that drew about six feet loaded.

Q. Could a steam vessel drawing the water they usually drew at that time get up to the dock on the main land at Milford?

A. No, sir.

Q. How did they handle that with reference to getting their lumber out?

A. A good deal of that lumber that was sawed at Milford
194 at that time was sold locally down to Superior. They took that out on scows. Then they had a dock outside there where they used to take their lumber out and pile it and these vessels would come up and load to such depth of water as they could get out with and then go out.

Q. What was your knowledge at the time, of the condition of the water between the point marked C on this map Exhibit 3 and this hole that I speak of that led up to Milford?

A. Well, the general understanding at that time was that you could get in to it but you had to come out the same way you went in.

Q. Was there any bar there between the point marked C——

A. That was the reason we had to do it, on account of the bar.

Q. Did you ever know of any boats drawing six feet of water going between the point marked C and the deep water in toward Milford?

A. I don't think I did.

Q. Never knew of any boats going that way?

A. I don't think so.

Q. Do you think they could get in there in those early days?

A. I don't know. It wasn't the general way they went.

Q. For how long a time did you know of that bar being there?

A. We sounded all over there to find a chance to get out with our boats and we took small boats and poled a scow across, clear across back and forth here to get up—if we could have got up here (indicating)——

Q. If you could have got up through that hole marked H——

A. If you could have got up here it would have been very much easier for us but we always brought her in trouble here.

195 Q. You say "here"; that is to the point marked westerly of C, you couldn't get over?

A. No, sir.

(Recess, ten minutes).

Q. Calling your attention again to Minnesota's Exhibit 3, I will ask you which was the main traveled channel, the one to the northerly of Big Island from the point marked B on this map or the route to the southerly of Big Island from the point marked B?

Mr. Owen: Objected to as calling for a conclusion of the witness.

A. I think most of the tugs and small boats went through the cut-off.

Q. That is the southerly channel?

A. That is the southerly channel.

Q. Did you frequently go up the channel to the northerly of Big Island from the point B?

A. Yes.

Q. Did you frequently go in through Milford dock?

A. No, sir.

Q. Did you go in to the Milford dock?
A. Not with that boat.
Q. No, but I mean at other times?
A. I did at other times. Used to be a good trout stream. Used to go up and fish trout often.
Q. Did you used to be up to this Le Garde meadow to haul hay?
A. Yes, sir, cut hay, stay up two or three weeks at a time.
Q. Now, coming down on the lower bay, I want to ask you where the deep water was in the lower bay, and the part of the bay that was mostly navigated by boats in the early days?
A. It was on the southerly side of St. Louis Bay.
196 Q. You spoke to me about being very deep water at the towhead. Do you know where that was?
A. I don't know where it is on this map. If it ain't changed any I could find it, though.
Q. Here is Grassy Point, marked Grassy Point on Minnesota's Exhibit 1, and I call your attention to this deep water to the easterly of Grassy Point, 36, 45, 30, 30, is that point there the one referred to as the towhead?

Attorney-General Owen: Objected to as leading.

A. There was very deep water there at the towhead right up close to the shore, if that is the towhead, if that deep water indicates it. I don't know about that. It seems to me it was further down this way than that map shows it. I know the depth of the water at the towhead because I lost some horses there and went to fish them out.
Q. That was on the Wisconsin side?
A. That was on the Wisconsin side. It was along about thirty or forty feet.
Q. Calling your attention to Exhibit 3 I will ask you if the original entry was as it appears on this Exhibit 3?
A. No, sir.
Q. What was the change?
A. Where is the old light-house here? If that is the old light-house, and I think it is, that used to be the end of the point.
Q. Calling your attention to Exhibit 1, does that indicate——
A. Let me see that glass. I can't see very good. See where the end of the point ends. Yes, sir, that's very close to just the way it used to be in old times.
197 Q. That is the Meade map is more accurate at this time?
A. In the early days, yes, sir.
Q. In the early days, than Exhibit 3?
A. Yes, sir.
Q. There have been some changes made?
A. Yes, sir.
Q. What is the character of the bottom of upper St. Louis Bay?
A. Very soft.
Q. Very shifty?
A. Shifty, yes.
Q. Would the fact that the soundings showed one thing one year

be evidence of what the soundings were the next year in the same place?

A. The main channel there that we used to use to go up didn't change a great deal. We used to have a range way over on the other side so that when we went to stake it we knew pretty near where to start in to sound and it wouldn't change a great deal. It changed some, and I know there was some places that we would have to evade year after year, that is, change from one place to the other.

Q. Later on, Captain Howard, you bought a yacht of your own, did you not?

A. Yes, sir.

Q. When did you get that?

A. I think I bought that in '91.

Q. That was a very large yacht?

A. Not very large; 108 feet long.

Q. And you ran that in the waters of Lake Superior and also in the bay?

A. Yes, sir.

Q. And you were captain at that time also?

A. Yes, sir.

Q. Do you hold a captain's license now?

A. Yes, sir.

198 Q. For Lake Superior or on Lake Winnipeg?

A. I might explain that to you. My license when I became a Canadian citizen, of course, it expired. It's out. I hold the papers.

Q. You are a citizen now of Canada?

A. I am a citizen of Canada. I have no right to go on these waters and use my license.

Q. Were you at one time an official of this city?

A. Yes, sir.

Q. About when?

A. You've got me now; I don't know. I forget.

Attorney-General Owen: You mean official of Duluth?

Witness: City of Duluth. I think I was an alderman for either four or six years and president of the council I think two terms.

Q. I show the witness Minnesota's Exhibit 16, and will ask you did you ever see that map before?

A. Yes, sir.

Q. Where did you get that map?

A. My father gave it to me.

Q. How long has he been dead?

A. He died in September, '81.

Q. Did he have that many years before he died?

A. He gave it to me a good many years before he died. I don't know how long he had it before he gave it to me.

Q. How long before 1881 do you think you had it?

A. Oh, must be close to ten years, I guess.

Q. Was that a recognized map in the vicinity of the head of the lakes during these years that you had it?

A. Yes, sir.

Mr. Fryberger: I will offer in evidence Minnesota's Exhibit 16, being a map of a portion of the lands of the St. Paul & Duluth Railroad Company showing pine timber district on St. Louis
199 River and its branches tributary to Knife Falls.

The Commissioner: What is the date?

Mr. Fryberger: No date on it.

The Commissioner: How old is that map, Mr. Howard?

The Witness: That is my father's writing. These lands he wanted me to look up.

Mr. Fryberger: He said his father died in '81 and he had it a good many years before that.

Q. Is it over forty years old?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

Q. I will ask you, Captain Howard, to look at this map and to the dotted line running from the point between Rice's Point and Connors Point marked "State Line" running all the way up through St. Louis Bay and upper St. Louis Bay and ask you if that dotted line and these words "State Line" were on there at the time you got that map?

A. They were.

Q. Same way as it is now?

A. Yes, sir.

Cross-examination.

By Mr. Hudson:

Q. Mr. Howard, I understood you came to Duluth in about the year 1857?

A. Yes, sir.

Q. And have resided here until the last five or six years, until you went to——

A. Not all the time, no, sir.

Q. I understood you to say in your direct examination that some of the first work that you did on the waters of the St. Louis
200 Bay and River was logging?

A. Yes, sir.

Q. Conducting logging operations?

A. That is the first work I did.

Q. Can you state when you commenced to do that work?

A. You mean on the waters?

Q. Yes.

A. My recollection is that it was the year that the Civil War ended, about '65 or '66, along in there some time.

Q. 1865 or 1866?

A. Yes, sir.

Q. And you continued that work up to about how long before you got a tug to do that work?

A. The first raft that we ever towed with a tug was in 1868; that is my recollection, '68.

Q. Then it was about two years that you poled the logs down?

A. Poled, yes, sir.

Q. You stated that you cut some of these logs or the greater part of the logs on the Wisconsin side of the bay?

A. Yes, sir, most of them.

Q. And as I recollect your testimony, you commenced to log nearly opposite Grassy Point in there and continued up until you reached Big Pokegama?

A. Yes, sir, we got a good many down there.

Q. And that you got these logs down by poling them?

A. Some of them, yes, sir.

Q. Now in your testimony you said you put the logs in a boom along the shore?

A. Yes, sir.

Q. It was more convenient, was it not, to have these logs poled down to Connors Point or Howard's Pocket by being close to the shore than it was to swing away out into the current, was it not?

201 A. Sometimes you couldn't stay where you wanted to.

Q. But that's where you wanted to stay?

A. That's where we would like to stay, yes, sir.

Q. And at various times you used ropes to assist you?

A. Well, sometimes we did. Sometimes we had a little anchor and we carried that out with a small boat and pulled along when it got too hard poling.

Q. I understand you testified that at certain points——

A. At certain points for instance we got into deep water at towhead, we would have to tow ourselves around until we got ourselves into water we could handle ourselves in again.

Q. To pole these logs during this period that you poled them down, what depth of water would you require?

A. Two foot or two foot and a half would be ample.

Q. Then from two to three feet would serve the purpose?

A. All purposes as far as floating logs was concerned.

Q. And as you continued to cut off the logs up the bay toward Pokegama inlet you could use this same old channel and continued to use it to do that floating right along next the shore, didn't you?

A. That is the only place you could get out.

Q. And two or three feet of water was all that was required?

A. To float the logs, yes, sir.

Q. As a matter of fact, if it wasn't for the convenience in shortcut in getting them down to Howard's Pocket, and convenience of using the bank to assist you in getting them down you could

202 have floated your logs anywhere on the bay?

A. No, you couldn't do it. Along in the summer these weeds come up and this grass and you have got to get out of that shallow water. You have got to get out where the water is so deep that the weeds don't obstruct your logs. If you get a boom of logs in a lot of weeds it's a pretty hard proposition to get them through,

but if there were no weeds and all considerations being equal you could have got along with three feet of water.

Q. You commenced to raft logs down very early in the spring, didn't you?

A. Well, as soon as the weather got warm.

Q. And that was before the weeds came up?

A. Not always. We generally had logs enough left over to start the mill.

Q. Then in 1868 or 1869 you secured a tug, do I understand?

A. In '68 there was a tug came up here. My father hired it and towed some logs down, yes, sir.

Q. About what draft?

A. Oh, I think about six feet or six foot six along there; may be seven feet.

Q. How long did you use that tug there?

A. Well, I think we made two or three tows with it that season.

Q. Any after that season?

A. Not with that boat, no, sir, not to my recollection.

Q. Well, a considerable part of this work that you did in rafting logs was done on the outside of the bay, was it not, outside of Rice's Point along Wisconsin shore?

A. You mean between Connors Point and Grassy Point?

Q. Yes.

A. Oh, not very much. We cut some logs in there. You
203 see there was a time before I got—when I was too small. They used to cut the logs along there. They had cut pretty well up by the time I came up. He started that mill up in '57, '57, '58, '59, '60 and on to '66, all these years in there that I was pretty young to go out on the raft. My father was cutting logs all along that close haul before I got to work. That used to be a big swamp.

Q. These logs that you towed with this tug that year were gotten up at what point?

A. Up at Big Pokegama.

Q. Did you follow the shore line down in bringing those?

A. No, sir, we came out of the Big Pokegama and came out in the center of the channel to get water. We had the channel staked out.

Q. The channel was too shallow along the shore?

A. Along the shore, yes, sir.

Q. Do you know what the name of the boat was up to, say 1884 or '5, that had the greatest draft of water, required the greatest depth of water?

A. Up in this country?

Q. Yes.

A. Up to '85?

Q. Yes, in St. Louis Bay and St. Louis River that was used there?

A. I don't think I do.

Q. You don't know the name of the boat?

A. There was a good many boats. There was quite a few boats up there between those times. You are getting into a boat country now.

Q. I mean that was in use on the St. Louis Bay and River?

A. You must remember that during that time the Duluth and Superior came up here. They were quite deep draft boats. I think they used to draw, my recollection is, close to eight feet; may
204 be a little more.

Q. Where did they run?

A. Used to run between Duluth and Superior.

Q. Did any of them run up the river to Fond du Lac?

A. I don't know; I don't think so; I don't know; I couldn't testify as to that.

Q. Do you know of any boats that ran up the river to Fond du Lac during those years?

A. Which years?

Q. 1884 or '5?

A. No, sir, outside of the Emerald. She used to run up partway or up there somewhere; I never rode up on her.

Q. You never navigated above Big Island?

A. I navigated the Lottie Bernard above the Big Island but I never did the Emerald. I had nothing to do with her.

Q. The Lottie Bernard drew about six feet of water?

A. Yes, she drew more than six; pretty close to seven.

Q. You say you sometimes went south of the Big Island and to the junction—and you got into the St. Louis River from the south channel—until you got into the St. Louis River from the south channel?

A. I got out of the St. Louis River once from the south channel and I never did but once with that boat. There was an elbow in there, and in making that bar she drifted down to the bank and we had to carry the anchor out and was about a half a day getting off, and after that we took the other channel.

Q. That is you took the channel around to the north of the island?

A. Yes, sir.

Q. I show you Minnesota's Exhibit 3 and call your atten-
205 tion to the most southerly point of Big Island and will ask you to point out this point that you attempted to go through the south channel at one time?

A. Right down here (indicating); right down on this side (indicating).

Q. Is that the junction of this what you call the south channel with the channel that runs around to the north and west of Big Island?

A. You are going down. You go right by this.

Q. That is the junction point?

A. Yes.

Q. From that junction point I will ask you to trace down with the pencil the channel that you took?

A. Well, as near as I can, we used to come over here and go by this Spirit Lake in here (indicating). Let me see that other chart, that old one. There has been some filling in here or something on this one, hasn't there?

Q. That has been filled in by the dredging of the channel?

A. That don't look natural.

Q. Witness refers to Minnesota's Exhibit number 1. Now the junction is——

A. Let me get straightened out here. Where is that Spirit Lake dock? That must be there (indicating). We went right down here. That other one shows islands. You couldn't get through here (indicating) but I know we went down around this way and came up in there. Where is that little island in there? Came in through here and right out this way (indicating).

Q. Now, will you follow me; the witness testifies that leaving the junction of the south channel with the channel that runs around to the westerly of Big Island he takes the direction shown on Minnesota's Exhibit 1 in a westerly direction where the soundings
206 appear to be the deepest, to a point which he has pointed out on the Minnesota shore as Spirit Lake dock; is that it?

A. Well, landing, didn't use to be much of a dock there; used to be a little landing place.

Q. And continued to follow the portion of the channel, the deepest portion of the channel, to the northwest of the island, to a point northerly——

A. Where is that little island?

Q. Northerly of the little island which has been referred to as Tollis Island. Do you know that by that name?

A. I did not, no, sir.

Q. Referring to Minnesota's Exhibit 3, the little island the witness refers to has the letter K marked on it on Exhibit 3? The channel that he refers to is north of the island with the letter K, then running in an easterly direction to the junction in Exhibit 3 with the dredged channel.

Mr. Fryberger: What is the point in red, point marked C; down here, isn't it (indicating)?

Q. To the point marked C in red. Did you make this trip around there through this channel many times with that larger boat?

A. Yes, sir.

Q. Was that a well-defined channel through this point?

A. I don't know. We never had any trouble after we got up here. Never had any trouble after we got to Swanson's. Had no trouble anywhere here after the stakes was set. Trouble was in the spring when you would go to set the stakes.

Q. You had no trouble because this was a well-defined
207 channel, deep channel?

A. There was water enough for us after we got it staked out.

Q. This staking it out was simply to indicate where the channel was?

A. We would take a pole and go and find where the deepest water was crossways and then set two stakes down.

Mr. Fryberger: On either side.

The Witness: On either side.

Q. Your purpose was to stake out the channel?

A. Yes, purpose was to keep us in water we could float in.

Q. About the time that you made these trips did other boats of the same draft of water go up the river; did you know of other boats?

A Well, there was other boats there but there weren't many boats here then. There was a little tug; I can't remember her name now. Can I ask Charlie McManus a question?

Mr. Hudson: Certainly.

The Witness: What was the name of that—some cousin of yours brought up after the Amethyst was here. Didn't you have a cousin that brought a tug up here after the Amethyst, after the Witt?

Mr. McManus: Hattie Vincent.

The Witness: I have seen her up the river here but never paid any attention to her.

Q. Isn't it a fact, Mr. Howard, that any boat drawing eight or nine or ten feet of water, to go from the south end of Big Island here (indicating), would have to take this north channel around the north and west of Big Island that you have just described?

A. I think ten feet of water would bother them pretty bad these days.

208 Q. Well, the soundings here show sixteen feet and fourteen feet of water?

A. I can remember my pole didn't find it. I don't know what the map says. In spots you wouldn't get any ten feet of water.

Q. Well, nine feet?

A. I couldn't testify to that. I looked for water close to seven feet; when I got that I went along. Here was good water; tugs could make it.

Mr. Fryberger: Indicating the south channel.

The Witness: Indicating the south channel. After making this turn, slow me down, and I went in here (indicating) and on to that bank, and I was half a day getting off.

Q. You testified that this upper St. Louis Bay was very soft and muddy; was that the fact only with reference to the more shoal water or would that hold true with reference to the deep channel?

A. I can't tell you about them channels much. I don't remember. My experience has been poling logs there. When I found the mud, when I got my pole in the mud, that was my experience in rolling these logs around.

Q. You don't know anything about going on that——

A. All I know is that when we went out and sounded it was soft enough to stick the stakes in and hold, and when we was poling logs down there it was kind a job sometimes, if you had been pushing very hard to get your pole out. Once in a while you would strike the sand. Then you would strike the soft stuff.

Q. That was in shallow water along near the Wisconsin shore where you poled the logs?

A. Possibly.

Q. Isn't that what you want to confine your testimony to?

209 A. Possibly. We used to pole our raft day and night there. That's possibly so.

Q. You testified that you got a boat of your own in 1891?

A. Yes, sir.

Q. What was that boat?

A. She was a small boat 108 feet long and 15 feet beam.

Q. Did you use it on the St. Louis River?

A. I have been up to Fond du Lac a good many times.

Q. How long did you run the boat on the St. Louis River?

A. I sold her to the United States Government in—oh, I can't tell you the year. I must have had her about three or four years, something like that.

Q. Do you know when this new channel was dredged?

A. I do not.

Q. Was it dredged after you quit navigating the St. Louis River?

A. First?

Q. Yes.

A. Yes, sir.

Q. Well, after the time you had this boat in 1891?

A. I can't tell you. I don't know. I have forgotten exactly about that. About in '91, whether that was '92 or '93, whether that was dredged then or not; but I don't think it all was; may be some of it; I don't think it was; I wouldn't be positive as to that.

Q. Do you recall the fact that there was a sawmill at New Duluth in 1890 and '91?

A. No, sir.

Q. Do you know whether or not it is a fact that there were

210 barges loaded with lumber there and brought down the river?

A. That may be. The channel was all straight when I went up there in '91 and '92. I didn't have to stake it them times. We didn't start up till late in the season.

Q. But you do know that there was barges of lumber brought down from New Duluth?

A. I couldn't tell you. I don't know that they were brought down at that time; but I didn't do any sounding to go up here with this Nautilus.

Q. How much water did she draw?

A. She drew six feet, strong six feet.

Q. In going up there did you go west of the island?

A. Went north of the island.

Q. North and west of the island?

A. Yes, sir.

Q. In that channel that you have described?

A. Yes, sir.

By Mr. Gard:

Q. As I understand it from your testimony you searched around

up in the bay or river up there to find a place where your boat could go. That drew about how much water?

A. Seven feet.

Q. And then you marked it out?

A. Yes, sir.

Q. And all you needed was a place to run where you had seven feet of water; is that right?

A. We got the deepest water there was.

Q. Did you get the deepest water there was?

A. Yes, sir.

Q. I want to call your attention to Wisconsin's Exhibit 1, which is the Meade map without the red lines, and I will ask you, I

211 will call your attention to the point immediately east of Grassy Point and ask you if the deep water is indicated there on this map by the soundings?

A. I don't know anything about that. I couldn't tell you about that, because we used to come to here (indicating) all right.

Q. By "here" you mean end of Grassy Point?

A. Opposite the end of Grassy Point. We used to come to here. Then if the thing hadn't been staked we had to stop until we staked it. Where is that little island? Is that it? Is that the little island?

Mr. Fryberger: That is the little island.

The Witness: We used to come around by that, pretty close to it, and come up here (indicating). Used to come in through here like this, around in here. I can't tell you exactly. We used to hunt up the best water and get in here until we struck in here somewhere, and then after that we struck good water.

Q. In running the line through you have gone over some soundings that are only six feet and one of them five feet?

A. Can't help that. We found the right places. I know we found the right place to stick stakes down.

Q. You had, then, seven feet of water?

A. Yes, sir.

Q. And that is all you needed?

A. That's what we want. We got the deepest water.

Q. Do you say you got the deepest channel when you went over these soundings?

A. Yes, sir.

Q. Do you see these soundings marked on the map there,

212 21, 23, 24?

A. I didn't read them. I see them all clear through all the way up.

Q. Up to what?

A. To where the Milford boats came out.

Q. Are those soundings correct?

A. As far as I know.

Q. Then the deepest water was over there?

A. In that hole.

Q. In that channel marked H?

A. That ain't a channel; that's a hole.

Q. Now, Mr. Howard, I want you to start at Grassy Point and read the soundings right up that line up of what you call the hole up to the island there, what you call Little Island?

A. Yes, sir.

Q. Now you start there at Grassy Point and follow the deepest water?

A. Yes, sir.

Q. Now you may read those soundings?

A. Where is Milford on here? Milford is here, ain't it? Ain't that Milford?

Q. That is my recollection of where Milford is but I am not sure.

A. Let me get hold of this again. The deepest water follows around this Milford channel until you get to this bar in here and that you can't get over.

Q. You mean the deepest channel, the deepest water, is this channel marked H, isn't it?

A. Up as far as Milford if you want to go to Milford.

Q. That is the deepest water there is, anywhere on the bay there, isn't it?

A. Yes, sir, if you want to go to Milford.

Q. It is the deepest water there is anywhere on the bay, isn't it?

A. Here is a hole down here by towhead that's deeper.

Q. That's below Grassy Point, isn't it?

A. Yes, sir.

213 Q. There is no deeper water above Grassy Point than there is in that water marked H?

A. I don't call that a channel except the Milford channel. It would be like a slip cut in to go to Milford.

Q. You didn't know of anybody cutting it in there?

A. No, sir.

Q. It was natural in there?

A. Yes, sir.

Q. Did you ever go through it?

A. Yes, sir.

Q. How did you come to go through it?

A. I went through with the boat.

Q. What boat?

A. I went through with the boat, George W. Ford; I went up with Captain Parker.

Q. What were you going for?

A. Went up for lumber.

Q. Where?

A. To Milford.

Q. And you went up that channel H?

A. Yes, sir.

Q. How often do you think you went up that channel H?

A. With the vessel, that is the only time to my recollection.

Q. Without a vessel?

A. I have been up a good many times, though; probably fifteen or twenty times.

Q. On what?

A. On small boats. Go up there trout fishing—great trout fishing.

Q. What kind of boats were they?
A. Sailboats.
Q. When was it that you went up there fifteen or twenty times?
A. I used to go up there often, four or five times a summer.
Q. Up channel H?

A. Go right on over there. We wouldn't follow that chan-
214 nel; wouldn't have to,—*like* draft sailboat.

Q. You would go anywhere?
A. Yes, sir. We would go up to Milford.
Q. You have been over that channel H many times in a boat?
A. Yes, sir. And then I will tell you another circumstance that happened there. My father and this man Keely that built this Milford mill got into a lawsuit which lasted twenty years, and I used to have to go up there with my father once in a while with a small boat looking the logs over. The United States Marshal seized the logs and they had a lot of trouble. I was a young man then. We used to always go along and catch a few trout.
Q. Your navigation was over the south channel, the channel south of Big Island, and part north?
A. Yes, sir.
Q. Most of it north?
A. Most of it north, yes, sir.

215 CHARLES A. KRAUSE was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Where do you live, Mr. Krause?
A. Fond du Lac.
Q. How long have you lived there?
A. About sixty years.
Q. You are a married man?
A. Yes, sir.
Q. Have a family?
A. Yes, sir.
Q. Do you run a general store at Fond du Lac at the present time?
A. Yes, sir.
Q. How old were you when you came to Fond du Lac?
A. Three years.
Q. And how long have you been in business in Fond du Lac?
A. Oh, pretty much all my life.
Q. You lived with your father there and mother from the time you were a little boy when you were three years old till you were grown?
A. Yes, sir.
Q. And then got married and carried on an establishment of your own. Now, Mr. Krause, in the early days did you spend a good deal of time on the waters of the bay, St. Louis Bay—St. Louis River?
A. Yes, I did quite often.

Q. As a boy did you do more or less hunting and fishing on the waters of the bay?

A. Yes, sir, I did.

Q. And after you grew to young manhood and during your life I will ask you if you have made a good many trips from Fond

216 du Lac by water to Duluth and Superior?

A. Well, I did make quite many trips; I couldn't tell how many.

Q. How did you people in the early days get your produce down to Superior and Duluth, stuff you raised there in the summer?

A. Well, we got it down by sailboat.

Q. Were you familiar with the routes that the boats traveled in going up and down these bays?

A. Yes, I was.

Q. Calling your attention to Minnesota's Exhibit 3 I will ask you if you recognize that as a chart of the situation at the head of Lake Superior showing St. Louis Bay, upper and lower?

A. Yes, sir.

Q. Now, what was that part of the bay to the westerly of Grassy Point known as, what was it called—that is, among you old settlers?

A. You mean the bay?

Q. Yes; was it known as upper St. Louis Bay or——

Attorney-General Owen: Objected to as leading.

A. I want to take a look at that.

Q. Here is Grassy Point (indicating).

A. Well, we always used to follow——

Q. I am not asking you anything about that. Read the question. (Question read by Reporter:) "Yes; was it known as upper St. Louis Bay or——?"

A. Yes.

Q. What was the body of water to the westerly of Grassy Point known as?

A. St. Louis Bay, I guess.

Q. Was it distinguished in any way from upper St. Louis Bay?

A. No.

217 Mr. Hudson: To the easterly, you mean?

Mr. Fryberger: To the easterly of Grassy Point. Thank you, Mr. Hudson.

Q. What was that known as?

A. That was the bays and rivers, is the only think I know of.

Q. Did you ever hear that part to the east of Grassy Point called lower St. Louis Bay?

Mr. Hudson: Objected to as leading.

A. Yes.

Q. Now I want to call your attention on this map to a hole, or sometimes they call it a channel, running from a point off Grassy Point from the letter G marked in red, up in a northerly direction, under Carnegie Coal Dock, what is marked as Carnegie Coal Dock,

past the red letter H, and under the point of land marked on this map "Coal Dock" up toward the point marked "Milford." Do you recollect Milford.

A. Yes.

Q. Now, I want to ask you if in the trips that you made down the river, down this St. Louis River and down the bay, whether you went north of Big Island or whether you went south of Big Island, did you ever sail around in through this hole?

A. No, sir.

Q. Did you ever know of it being used by boats except to go up to Milford and back?

Attorney-General Owen: Objected to as leading.

A. No, I did not.

218 Q. Do you know which channel was used the most in the early days by the boats going up upper St. Louis Bay; that is, whether the channel to the north of Big Island or the channel to the south of Big Island? Which was used the most?

A. Well, we past through (indicating); we used this shortcut through.

Q. Yes, I know you used this shortcut to go to the north channel?

A. Yes.

Q. But which one did you use the most after you got to the point marked B? Did you use the south channel more than you did the north channel or about the same?

A. We used the shortcut more than anything else.

Q. Yes, I know you used the shortcut more than anything else; but about this using the channel south of Big Island and through the Devil's Elbow, did you use that?

A. That's what we used.

Q. Do you know whether any of the boats used the north channel going around the north of Big Island?

A. No, not at that time.

Q. You didn't know of any boats using that?

A. No, sir.

Q. And when you came down you always used the south channel?

A. Yes, sir.

Q. That was a much larger channel?

A. Yes.

Q. You never did any sailing?

A. No, I generally used to steer the boat.

Q. Did you help run the boat?

A. No, the oars, when I was a boy the oars were too heavy.

Q. Did you ever help run a sailboat up and down this river?

A. I used to steer this boat carrying this produce. They put me in to steering the boat, and when there was no sailing they

219 used to take the oars.

Q. Did you ever carry supplies back and forth on this boat up to the Indian village?

A. Yes, sir.

Q. Did you do that for several years?

A. We done that with the old settlers up there. There was six or eight of them would go together and take me along to steer the boat.

Q. Did you do that for a good many years?

A. Till the St. Paul & Duluth Railroad was built. After that I haven't done it.

Q. Do you recall when the St. Paul & Duluth Road was built?

A. Not exactly.

Q. Well, about when?

A. Thirty-nine years ago, I think.

Q. Thirty-nine years ago?

A. Somewheres along there; I couldn't tell exactly.

Mr. Bailey: It's more than that; more than forty.

Mr. Fryberger: Thirty-nine is close enough. I think that is all. You may cross-examine.

Cross-examination.

By Mr. Gard:

Q. You live at Fond du Lac?

A. Yes, sir.

Q. How long have you lived there?

A. About sixty years; that is off and on. I was gone a little time and went back, but that was my home.

Q. And you say you came down the St. Louis River sometimes in a sailboat?

A Yes, we came down in a sailboat, yes.

Q. How often would you come down in a sailboat?

A. Well, sometimes we would come down twice a week and
220 sometimes not for three weeks again, and so on.

Q. And you usually came south of Big Island?

A. Yes, through the Devils Elbow; that is the way we came.

Q. You call the Devils Elbow the turn at the south side of the Big Island?

A. Yes, sir.

Q. And you always took that channel, did you?

A. We always took that channel.

Q. Because it was the nearest, didn't you?

A. Well, I don't know about that.

Q. That is the reason you took that, wasn't it?

A. Well, that wasn't the reason.

Q. What was the reason?

A. Because if we sailed through the other part of it—we tried that once and we got stuck and was kept all night there in the channel or in the grass there.

Q. You got in the grass, did you, the other way?

A. Yes.

Q. And after that you didn't try it any more?

A. We wouldn't try it any more because we didn't want to stay there all night.

Q. Now when you got below Big Island there you could go anywhere in the water with your sailboat, couldn't you?
A. When it was empty, yes.
Q. And you in sailing, you tacked, didn't you, with the sail?
A. No, the wind was right directly from the north?
Q. Was it always just direct from the north?
A. Pretty much, yes.
Q. And you didn't tack any?
A. Not to amount to anything.
Q. It was always the same direction?
A. Well, yes. When we got stuck that time there, that I
221 know of, that I remember, we turned back and went out the other way because we were liable to get stuck again.
Q. That is, you went back and took the shortcut?
A. Yes, we took the shortcut.
Q. The shortcut, you mean the channel south of Big Island?
A. Yes, sir, through what is known by the name of the Devils Elbow or what they called it.
Q. Yes, south of the——
A. Yes.
Q. Did you ever see what is called the Meade map?
A. No, sir, I never saw it.
Q. I show you Wisconsin's Exhibit 1. Now Big Island is marked on this map "The Island", isn't it?
A. That is the Big Island.
Q. It is marked on this map "The Island", isn't it?
A. Yes.
Q. You came through the Devils Elbow southerly of that island, didn't you?
A. Yes, that's where we always used to pass.
Q. Now, you take the pencil and run the line that you usually traveled with your boats after you went through the Devils Elbow southerly of the island?
A. Well, we went through—right here is where we came down the river and we went through like that (indicating).
Q. Now you have indicated. Mark that on the map. Just run a pencil mark on the map just where you ran?
A. I don't understand that either.
Q. There you see Big Island, don't you, "The Island"?
A. Yes.
Q. And here is the Devil's Elbow right there?
222 A. Yes. And where is the channel?
Q. This mark is the channel right there, around Devils Elbow.
A. That's what we called the channel.
Q. Now run the pencil over where you——
A. Where does the river here empty into the bay?
Q. That's for you to say. I want to know which way you went. I don't care where the river empties into the bay.
A. We followed the river down into the bay.
Q. When you got into the bay what did you *go*?

A. We went right straight through for Superior.
Q. You could go anywhere in that boat?
A. No, sir. We made a straight cut right for the point.
Q. For Grassy Point?
A. We went right straight through like this (indicating).
Q. And after you came from southerly of Big Island you went right straight through the bay to the channel between Grassy Point and Wisconsin; is that right?
A. Yes; we took the nearest point right through here and turned in to Superior around the point.
Q. That is around Grassy Point, you mean?
A. Yes.
Q. You didn't follow any channel after you got around the Big Island, did you?
A. No.
Q. You didn't try to follow any channel?
A. Why, we couldn't follow any channel. There was a big bay in there, but we went, after we got out of the mouth of the river we struck right straight for that point and then down the bay to Superior.
Q. Where do you consider the mouth of the river?
223 A. Well, I could show you the mouth of the river. I can't tell anything much about this map but I can show you the mouth of the river if I was on the ground, just the same as I could show you this room here.
Q. Where do you consider the mouth of the river?
A. Let me see. Where is the bay? This is the bay here, ain't it?
Q. There is Big Island. Now, will that locate you. There is Big Island there that I am pointing to. Here is Pokegama Bay. There is what is now called Kimball Bay?
A. I don't understand that map.
Q. Well, tell me without looking at the map where you consider the mouth of the St. Louis River?
A. The mouth of the St. Louis River empties into the bay, the St. Louis Bay.
Q. Where do you consider that that is?
A. On the south side.
Q. On the south side.
A. Yes.
Q. Of the Big Island?
A. Of the Big Island?
Q. Do you consider that the main channel south of the Big Island?
A. Well, it was at that time, I don't know.
Q. What time?
A. That is when I used to sail.
Q. When was that?
A. Well, I was twelve or fourteen years old, somewheres along there.
Q. How long ago would that be, then? When were you born?
A. 1854.

Q. Then that was in '66 or '8?

A. About '60—Yes, '66. Yes, just about '66. And from
224 that on I sailed on until after the railroad was built and then I didn't have anything to do with the river.

Q. After the railroad was built——

A. After the railroad was built we didn't sail any.

Q. All of your navigating was on the sailboat?

A. Yes.

Q. Did you meet boats going up and down the river when you came up and down it?

A. No, sir, not that I know of.

Q. Never met a boat?

A. There never was any boat at that time on the river that I know of.

Q. There wasn't?

A. There was nothing for them to run up there for.

Q. When did you first know of boats running up the St. Louis River?

A. I couldn't remember that; I couldn't tell you.

Q. But you are sure that you never saw any boats on the river or the bay there when you were going up or coming down from Superior in your sailboat?

A. I am sure I didn't see any myself when I was sailing.

225 Rec'd July 20, 1917, D. E. Roberts, Commissioner.

THURSDAY, July 19, 1917—10 o'clock a. m.

The hearing was resumed before the Commissioner Hon. David E. Roberts pursuant to adjournment.

ALBERT SWENSON, was called as a witness by the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Examined by Mr. Bailey:

Q. Mr. Swenson, you are a resident of the City of Duluth?

A. Yes, sir.

Q. And were born in what year?

A. 1862.

Q. And where were you born?

A. At the foot of Thirty-ninth Avenue West and Oneota Street.

Q. In the city of Duluth?

A. Yes, sir.

Q. That is in the part of Duluth now called Oneota, and which is just easterly of what is known as Grassy Point, is it?

A. Yes.

Q. And born, you say, in 1862?

A. Yes, sir.

Q. How long did you reside at that place?

A. Oh, until the fall of 1870.

Q. And then where did you move?

A. To what we call Spirit Lake now; it is on the shores of upper St. Louis Bay.

Q. And have you resided there ever since?

A. Yes, sir.

Q. Now calling your attention to Minnesota Exhibit 3, I will ask you if you can point out where it is you reside now? You say on the shores of Spirit Lake?

226 A. Yes, sir; up there. (Indicating.)

Q. With your permission we will just put an S there to mark Swenson. I mark an S on Minnesota Exhibit 3 opposite the little dock marked on the exhibit. Is that the point where you have resided since 1870?

A. Yes, sir. Not the same house but in the block.

Q. What has been your business?

A. Well, I was working in lumber and in the woods, and worked on the river with logs; farmed. Did most of the work on the woods, on the river and on the farm.

Q. You have navigated these waters of the St. Louis River and of the bay of St. Louis, have you?

A. Not more than a small boat; not on any large boat; only a trip now and then on a passenger boat.

Q. Well, you have navigated with boats drawing what draught?

A. Oh, that which the ordinary row-boat or sail-boat would draw.

Q. From your place of residence, and being here so long, were you familiar with the traffic up and down these waters between Grassy Point and Fond du Lac, say?

A. Yes, sir.

Q. The course of traffic.

A. I saw most of it, I guess; what was going on.

Q. Calling your attention to Minnesota Exhibit 3, and to a place right at Grassy Point, in the channel, I will ask you what course the main traffic, commercial traffic, took from that up towards Fond du Lac.

Mr. Gard: May it please the court, I object to the witness being shown this Minnesota Exhibit 3, on the ground that there
227 has been placed on that map a red mark, which is leading, and which tends to lead a witness, and in my judgment is about the worst kind of a leading examination that could be made—and I object to it.

The Commissioner: Go ahead, Mr. Witness, and answer.

Q. Have you the question?

A. Yes. When they went up the river, you say, to Fond du Lac?

Q. Yes.

A. Well, the most of the traffic went through what we call the short-cut; that is——

Q. And you have indicated with a pencil there?

A. Yes.

Q. Is it about the line marked A-E-G-B-D and then on up *the* southerly of Big Island?

A. Yes. If they had a boom of logs to tow they would tow down around this way. (Indicating.)

Q. That is, north of Big Island?

A. Yes, on account of that short elbow around there; that elbow there was too short a turn.

Q. When you say the elbow there, you are pointing to an elbow just southwesterly of Big Island?

A. It is southeasterly of Big Island.

Q. Is that right?

Mr. Fryberger: Let us look that up.

Mr. Hudson: It should be westerly.

Mr. Fryberger: I guess he is right. This map is not square with the world.

Q. You are pointing to the islands which appear next to Big Island and just below it on this map, are you, anyway?

A. Yes, sir.

Q. And you say the reason they took the boom of logs from
228 north in such cases was because it was hard to make the turn there?

A. Yes.

Q. Was there another channel or course of navigation that was used to some extent southerly of the one you have just described?

A. Southerly would be—?

Q. Well, I mean starting over here. (Indicating.)

A. Yes; this is the route they took, here.

Q. You have pointed out a route passing through lines A-E-G——

A. Just north.

Q. I asked you southerly.

A. I was going to say north of Swampy Island, or Swamp Island we call it, in the bay.

Q. Probably you did not quite understand the question, and so I will ask another one. Supposing that one were starting or coming along by Grassy Point and going up to Fond du Lac and expected to pass north of Big Island; then what course would be taken from Grassy Point?

A. Well, you would take that same route I just described, through here. I would call that north of that swamp island. Yes.

Q. Now, the route that you have indicated is about on the line A-E-G-B-C and then from there on extending up along what is marked on the map as White tracing?

A. Yes, sir.

Q. And that goes north of Big Island?

A. No, not that white tracing.

Mr. Hudson: He did not mark that.

Mr. Bailey: I did not say marked; I said what was marked on the map.

229 Mr. Hudson: He did not testify to that. He went up to this point.

Witness: I went up to C.

Mr. Hudson: He only went up to C.

(The witness traces on the map.)

Mr. Bailey: Now you will find that my designation there fits.

Mr. Hudson: I object to the answer. He marks it now close to the shore.

Mr. Bailey: We will straighten that out. What I intended to indicate was the light-colored crooked channel from the point C, not the dredged channel. Is that sufficiently indicated? If you can make it better——

Mr. Hudson: Yes, along near the Minnesota shore; that is the way he points.

Q. Now just notice my question, Mr. Swenson. The one I asked you a little while ago we got mixed on. Supposing that you were passing Grassy Point, was there any other channel that was sometimes used for navigation that was southerly of this line A-E-G and B?

A. Southerly—that would be in this direction?

Q. Yes.

A. Well, that was not used very often; it could be used, but it was not used very often. I don't know that I ever noticed it, any more than boats, small boats.

Q. Well, there was a channel there that was sometimes used?

A. Oh, yes.

Q. The line that you pointed to as the line marked A-E and curving to the left and around to the point F?

A. Yes, sir.

230 Q. Approximately that. Now what was generally considered by people at the head of the lakes—what was commonly understood to be the mouth of the St. Louis River? Where was it?

Attorney-General Owen: That is objected to as incompetent, irrelevant and immaterial and calling for a conclusion of the witness.

The Commissioner: He may answer if he knows.

A. Well, where the river divides, at what they call the upper end of Big Island, where the river divides, where the current divided, the channel divided.

Q. What have you to say or what do you know, Mr. Swenson, with reference to the shifting or changing of the bottom out there in what is known as St. Louis Bay?

A. Well, I believe there was considerable shifting and changing; I could not say how much.

Q. Was there a considerable amount of stuff coming down the river? That is, I mean debris and——

A. Oh, yes.

Q. And such stuff as that?

A. Drift wood.

Q. Especially in freshets?

A. Drift wood and sawdust.

Q. What was that first you said?

A. Drift wood, and sawdust, and all kinds of rubbish.

Q. Well, there is a considerable amount of dirt coming down too, in solution in the water?

A. Yes.

Q. Now, Mr Swenson, calling your attention again to Minnesota Exhibit 3, do you know whether there was a bar just easterly of the point marked C on this map? Do you know whether there was or not?

A. Yes, sir.

231 Q. There was?

A. Yes, sir; there was shallow water there.

Q. Was this which appears on this map to be a sort of a blind channel, marked H, ever used to any extent with boats or traffic that was going up to Milford?

A. Not but very seldom, excepting when they went to Milford for logs or lumber or something like that.

Q. In my office this morning, in going over this with you, we were discussing where Milford was?

A. Yes.

Q. I see it is marked here on the map; I think that is correct, according to what you said this morning.

A. Yes.

Q. Is it?

A. This is Kingsbury.

Q. But this red here, that is supposed to be the word "Milford."

A. Yes, that is Milford, the red there.

Q. Where the red is and where the word "Milford" is; that is the right place?

A. Yes.

The Commisioner: You spoke about a bar there. When was that formed, do you know?

Witness: That I do not know.

Q. Was it there as long as you know anything about it?

A. Yes.

Q. Have you observed whether there were tides in these waters up as far as Ford du Lac, or not?

A. Yes, sir.

Q. Just state what you know about that, and what you have observed.

A. Well, regular tides, changing about every two hours.

Q. Continuously, the year round?

A. Yes, sir.

232 Q. About every two hours?

A. Yes, sir.

Q. What do you mean by that—that the tide comes up about every two hours?

A. Comes up for two hours and runs the other way for about two hours.

Q. To what extent?

A. I don't know how far a piece of driftwood would go, how far

up the river it would go when the tide was up, how far it would carry it up, but I know that it has carried me and a raft of cedar poles and a horse on for two miles up the river.

Q. How long did it take to carry you that far?

A. I forget. That is a good many years ago, away back in 1881.

The Commissioner: How much of a rise and fall would the water have?

Witness: That all depends on the winds. Now of course if it was a northeast wind the rise would be more than if the wind was from the west. But there is a regular tide back and forth. Now, for instance, where the Northern Pacific Railroad runs along the shore line up to Fond du Lac, there are small ponds or little lakes inside, with a culvert across the railroad, a narrow space for the water to run in and out. You watch it there; there used to be three different places between us and Fond du Lac; watch them about two hours, and the water would run in for about two hours and out for about two hours; never still only for a minute or so while it changed.

The Commissioner: The change goes on no matter which
233 way the wind is?

Witness: The wind has nothing to do with it any more than when it is from the northeast the water does raise higher than it does otherwise, and I noticed it going to work; at six o'clock in the evening and at seven o'clock in the morning the tide would always be one way, a certain way, into those pockets, into those little ponds, through these railroad culverts; regular every evening and morning, morning and evening.

Q. You have given some particular attention to that matter, have you not?

A. Yes, sir.

Q. Lived right there on the shore of these waters all your life?

A. Yes, sir.

Q. Calling your attention again to Minnesota Exhibit 3 and to the lines of traffic that you have indicated, I will ask you whether the water in the main-traveled channel south of Big Island, which you have indicated, was as deep continuously as the water in the main-traveled channel north of Big Island, that is, the original channel?

A. I always thought it was.

Q. Did you consider it deeper?

A. I considered it fully as deep, and deeper than the other, but narrower.

Q. Do you know whether the level of the water up at Fond du Lac was or was not substantially the same as the level of the water in the main body of Lake Superior?

A. I do not know the difference. I don't suppose there is any, if very much, difference.

234 Cross-examination.

By Mr. T. T. Hudson:

Q. You lived up at Spirit Lake since what year?
A. The fall of 1870.
Q. The fall of 1870; where did you live before that?
A. Down at Oneota.
Q. How long did you live in Oneota?
A. From 1862; I was born in 1862; to the fall of 1870.
Q. You were born in 1862?
A. Yes, sir.
Q. Then you were eight years old when you moved to your present residence at Spirit Lake?
A. Yes, sir.
Q. You did not know much about the depth of water in the river up to that time, did you?
A. Well, no.
Q. Up to eight years old.
A. No.
Q. And you had not paid very much attention to the navigation of the St. Louis River up to that time, had you?
A. Up to what time do you mean?
Q. The time you moved up to Spirit Lake.
A. No; not any more than I noticed boats going by now and then.
Q. Those boats were small sailboats, weren't they?
A. There were some steamboats.
Q. What steamboats went by?
A. Well, there was one by the name of Kasota, and one by the name of George Frost and—well, I can't think of them. Yes, there were tugs, the tug Agate and the tug Amethyst.
Q. Was that prior to 1870?
A. Yes, sir.
235 Q. Those boats could go anywhere, where the water was six or seven feet deep, couldn't they?
A. Well, that I don't know; I do not know how much water they drew.
Q. You don't know how much water they drew?
A. No, sir.
Q. Did you have charge of the running of any boats?
A. No, sir.
Q. You never had charge of the running of any boats?
A. No, sir, not any; I never worked on a steamer.
Q. Did you ever take any soundings of the channel?
A. Not exactly with a foot rule or measure, that way, but I always had a pike pole to pull the logs around.
Q. Oh, you worked on logs, did you?
A. Oh, yes.
Q. On the river?
A. Yes, sir.
Q. And you simply poled logs around with a pike pole?
A. Yes, sir.

Q. Is that the only way that you got your knowledge of the depth of the water in the St. Louis River and bay?

A. Well, that and other ways, different ways, you know.

Q. Well, name what ways they were.

A. A man working around, poling logs around, he will find the water that way; maybe he is out fishing; he will probably sound the water with the fish pole, to see how deep it is, and so on.

Q. To see how deep it is; what do you mean by that?

A. Well, if he wants to set a net or a fish line, or something like that, he wants to know what he is going to fasten his pole with, whether it is going to reach bottom, and so on.

236 Q. But in doing that you never got the depth of the water at any place?

A. Not exactly by feet and inches.

Q. But you simply knew that it was deep enough for you to set a net?

A. Find out where the deepest water was that way.

Q. You did that work, did you not, at particular spots, where you wanted to fish?

A. Well, yes.

Q. Or where you wanted to move logs?

A. Yes.

Q. Did you ever attempt to get the depth of water in a continuous line from Grassy Point up to Fond du Lac?

A. Well, I have work along the whole river, from Fond du Lac to Grassy Point. I do not think there is a foot of ground in the bay but what I worked on. I picked up logs that were hung up on the bars, for the companies that owned them, and had (you might say) to use my pole all over; I could not move the logs or get anywhere without poling; had to be done by hand.

Q. Yes. But you do not mean to be so extravagant as to say not a foot of the bay?

A. I do not mean to say every foot, because that would be impossible, but there are very few spots but what I worked over.

Mr. Bailey: Stick a good many pike poles in since 1862.

Witness: Well, a good many years at it.

Q. Of course I knew you did not mean that.

A. Of course I did not mean that; but in common talk we use that expression.

Q. Mr. Swenson, I show you a map that is marked Wisconsin Exhibit 1, which is known as the George G. Meade map, and which shows the St. Louis bay and St. Louis River and Superior

237 Bay and the waters of Spirit Lake, and also shows Fond du Lac. Now you tell me you are familiar with all of the waters from Fond du Lac down?

A. Yes, sir.

Q. And this map shows soundings in what appears, by the lines each side of a white space, to be a channel or a stream.

A. I don't understand you.

Q. This is the white space I refer to, and it shows figures and

soundings all the way down, between two lines that appear to make a stream, so far as the appearance on the map goes.

A. Yes, sir.

Q. And that commences just above Fond du Lac. Are you familiar with the George Meade map?

A. No, sir.

Q. Have you ever seen it?

A. No; I am not familiar with it.

Q. But you do say that you know every foot of water, the depth of water?

A. Well, I have been over them, yes; worked on them.

Q. Would you think that the depths shown by the figures in this channel or stream on this map are about correct?

A. I suppose they are correct; I have no way of knowing otherwise; that is, as to the exact depth.

Q. That is, when you did your poling, used your pike poles and fishing poles to find the depth of water, you know there is deep water where this channel is do you?

A. Yes. I tried to avoid deep water; I could not reach bottom with my pole; my pole was 16 feet.

Q. You knew it must be deeper than that if you did not
238 reach bottom with your pole?

A. It probably was and probably wasn't; it was hard to tell.

Q. Did you find many places where your pole was not long enough?

A. There were places, up river.

Q. Following down this channel or stream that I have mentioned, to Big Island, you say that boats generally went through the narrow channel to the south of Big Island?

A. Yes, sir, that was it.

Q. But you say that rafts of logs went around to the west and north of that island?

A. Yes, sir.

Q. You have seen boats also go around there, haven't you?

A. Oh, yes.

Q. From 1870 down that was very often taken by the larger boats, wasn't it?

A. They took both routes.

Q. After Spirit Lake had a dock, was not this the one that they took mostly?

A. Yes.

The Commissioner: What do you mean by "this?"

Mr. Hudson: The north channel, the one around north of the island.

Q. That was one they took the most?

A. Yes.

Q. I will ask you to trace down with a pencil the route around on the north channel that the boats did take. We will start in here

at the south end of Big Island and follow the channel that is westerly of the Big Island.

A. I am not very good at tracing.

The Commissioner: You will have to speak up, Mr. Wit-
239 ness, so we can hear you.

(The witness traces on the map with a lead pencil.)

Witness: I cannot see very good. It is so much alike, the color of this—the color is so much alike.

The Commissioner: Maybe you can use this glass. (Handing a magnifying glass to the witness.)

Q. Try it with the glass. There is supposed to be the swampy island, I take it, that you testified to.

Mr. Bailey: What do you point there for?

Mr. Hudson: What?

Mr. Bailey: Didn't you point there, Mr. Hudson?

Mr. Hudson: No, I pointed there, to the Swampy Island that he was testifying to.

Mr. Bailey: That is not the Swampy Island.

Mr. Hudson: Isn't it?

Mr. Bailey: No; it is away down here, right there.

Witness: Yes; that is what I was looking for.

Q. I will ask you the question right here: Is the Swampy Island the island that you know as the Tallas Island?

A. No, sir.

Q. Oh, that is not? Then I am wrong about that.

A. No, sir. I am not used to handling maps. It is something like that. (Indicating.) I guess that is pretty close to it.

Q. Now, which side of Tallas Island did you go?

A. We went on the north side.

Q. I will show you another map now that shows that
240 island a little plainer. This is Minnesota Exhibit 3 that I show you, and upon this chart is shown the present dredged channel, and on an island that is immediately north of the present dredged channel the letter K in red is shown. This island has been enlarged very much by all the waste taken from this dredged channel and it is extended out towards Spirit Lake?

A. Yes, sir.

Q. The Spirit Lake station. Now I want to ask you if when you passed that island that the letter K is marked on, the vessels went to the north of that island, or went to the south of it?

A. They went to the north.

Q. Then they went to the north of it. Then, you wish to correct your statement, do you, in marking Wisconsin Exhibit number 1 at that point, which is directly north of the island?

A. Well, I——

Q. You marked south of this island.

A. My intention was to mark north of that island.

Mr. Fryberger: Let him change it.

Q. Change it. You see the depth of water to the north of it there, don't you?
A. Yes.
Q. I want you to get it right.
A. I was afraid I was not doing it right.

(The witness examines the map with a magnifying glass.)

Mr. Fryberger: I would like to make a suggestion. Why don't you erase that line below there and avoid confusion?
Witness: There was a kind of a channel throughout here, was it, at one time?

241 Mr. Fryberger: I think the record ought to show that fact; that was south; here is the line to the south of Tallas Island? Wasn't that so, Mr. Hudson?
Mr. Hudson: Yes.
Mr. Fryberger: He has erased the line made south of Tallas Island?
Mr. Hudson: Yes, and has extended the line around north of Tallas Island.

Q. Now, going out from the point of Tallas Island, you notice a deep channel of water, do you not, marked in white?
A. Yes.
Q. With the letter H on it, on this map?
A. Yes.
Q. Did vessels take that channel down to Grassy Point?
A. They did sometimes, when they had lumber or logs to take out of Milford Bay.
Q. I will ask you to take your glass and look carefully at the soundings from right opposite the southern point of Grassy Point, in that channel marked H on Wisconsin Exhibit 1, and note the depth of the water shown in that channel.
A. Yes.
Q. You see it, do you?
A. Yes.
Q. The shallowest point until you get to the west end of that, where it joins the present artificial channel——
A. Yes.
Q. — is fifteen feet, isn't it?
A. Yes.
Q. Then following along to the west, to a point where the word "clay" appears on the map, you notice the figures 24 feet?
A. Yes.

242 Q. And then following that immediately is 15 feet of water?
A. Yes.
Q. Right in the direct line; in the lightest portion of that channel next is the figures 12?
A. Yes.

Q. Following on south in that same direction is the word nineteen feet?
A. Yes.
Q. Those appear to be the shoalest places in that, do they not?
A. According to these figures there, yes.
Q. According to these figures?
A. Yes.
Q. You have not any doubt but what this official map is correct, have you?
A. Well, it probably is. There was a shoal in there some place.
Q. Well, twelve feet would be more of a shoal than nineteen, wouldn't it?

Mr. Bailey: Eight would be more than that, wouldn't it, Mr. Hudson?
Mr. Hudson: Yes, eight would be more than that.
Mr Bailey: You have two 8's in there.
Mr. Hudson: Yes, but he has marked another channel of seven feet that he has noticed, that he has passed.
Witness: Well, that is the route they generally took.
Mr. Bailey: Just a moment. What do you mean by that?
Mr. Hudson: Seven feet——
Witness: The route that I marked there.
Mr. Bailey: The route you marked.

Q. Goes through seven feet as marked on this map?
A. Yes, sir.
243 Q. Those two figures, 7 feet?
A. Yes, sir.
Q. 8 is even more than 7, isn't it?
A. Why, yes, sir.
Q. And 12 is more than 7?
A. Yes.
Q. Now, you say vessels went up here to Milford to load with lumber?
A. Tugs went up there with scows to take lumber away from there, and logs, tow logs.
Q. In this deepest water where it is marked as channel, or where it appears to be a channel, wasn't that a clay bottom?

Mr. Fryberger: Won't you locate it?
Q. I will locate now the deep water where H is marked over a channel.
A. Well, that I don't know, because I could not reach bottom with my pole.
Q. It appears so on this map.
A. That depth of water.
Q. It appears on this official map, doesn't it, the word "clay" at different points following the deep water?
A. Well, it might have been clay for all I know.
Q. Now, this shoal water—and I refer to shoal water as being 5

and 6 feet of water—what kind of a bottom did that have, outside of this channel?

A. Generally sandy bottom; some places it was mud.

Q. Some places it was mud?

A. Black mud they call it.

Q. Was that silt that was carried down the river and deposited there?

A. I suppose so.

Q. You spoke about driftwood filling up. As a matter of fact driftwood does not fill up a channel, does it?

A. Well, now I——

244 Q. Doesn't the driftwood follow to a shore and distribute?

A. I know one place there were sawdust and planing-mill shavings and sand and mud mixed to a depth of 7 to 8 feet. I will show you where that is.

Q. Yes, I wish you would.

A. Right in here (indicating); kind of an eddy, the current coming down here, and it settled in there; a person could sail in there with a sail-boat, and it was hard to get at—several acres.

Mr. Hudson: The witness points to a light space on Wisconsin Exhibit 1 that has several acres in it, and on the map the soundings are——

Mr. Bailey: Cannot you designate it?

Mr. Hudson: Just to the west of Big Island on the map, and quite close to the shore of Big Island. The soundings shown on that are figures 7 and 8 in numerous places?

Mr. Bailey: 5, 4 and 3.

Mr. Hudson: Well, those are lower down.

Mr. Bailey: Isn't it proper to put that in?

Mr. Hudson: 5 and 4—that is not where he pointed. He pointed to this light space here.

Mr. Bailey: Give us an idea where it was.

Witness: Well, it was right in here (indicating); it is there today, I suppose; I have not seen it now for six or seven years.

Q. Now, you say that was formed by an eddy?

A. I suppose it was an eddy; I don't see how it would settle there otherwise.

Q. Was that because the current of the river swung here

245 around farther to the west following the channel?

A. Well, perhaps that was it; I don't know; but that has always been my idea that it is an eddy was the cause of the formation of it.

Q. But that formation is outside of the well-defined channel quite a distance, isn't it?

A. Outside of the new channel.

Q. Well, it is outside of the old channel as well?

A. Yes.

Q. Considerably east of the old channel, isn't it?

A. Yes.

Mr. Hudson: I think at this point, before we forget it, we will

have the reporter indicate on the record the course that you took from the south end of Big Island, showing where the channel was that was taken by vessels; and if you watch closely, Mr. Bailey, we will see if we can designate that.

Mr. Bailey: It is marked on the exhibit.

Mr. Hudson: Well, it is a pencil mark, and I think the reporter had better take it into the record. Commencing at the junction of what has been testified to as the south channel, the channel running east or south of the island, with the channel that runs west of the island, following in a westerly direction of the map a light course upon which figures of highest numbers are placed, and which are west of a line marked on Minnesota Exhibit 3 as L in red.

Mr. Bailey: Now let us see; it that true?

Mr. Fryberger: (After referring to Minnesota Exhibit 3) I think so. Yes, that is right.

Mr. Hudson: Continuing in this channel designated by the
246 highest numbers in a northerly and easterly direction westerly of Big Island to the part of said channel which is directly north of what has been stated as Tallas Island and which is marked as K on Minnesota Exhibit 3; continuing in this same channel as shown by these highest figures in an easterly direction to a point marked C on Minnesota Exhibit 3.

Mr. Fryberger: Now why don't you put a red line down there, Mr. Hudson? Just do it yourself.

Mr. Hudson: We will have to use this map ourselves and I do not want it subject to the objection we are making to your map, as leading; you might spring that objection on us.

Mr. Bailey: I think it is as objectionable to have pencil marks as it is to have a red line.

Mr. Hudson: This pencil mark can be taken off.

Mr. Bailey: You are not going to take it off after he has described it.

Mr. Fryberger: We do not intend you shall.

Mr. Bailey: Not if we know it.

Mr. Hudson: Well, that is C; I think that is correct; that is this point. We have been following this down here to C, following this old channel: this is K; to C.

Witness: Yes.

Mr. Hudson: Then following the water which on this map is indicated by the figures 7, 8, 9, and 10, in an easterly direction
247 to a point where the figure 24 in the deep channel is.

Mr. Bailey: Just southwesterly of Grassy Point.

Mr. Hudson: Southwesterly of Grassy Point indicated on Minnesota Exhibit 3.

Mr. Fryberger: As the letter B.

Mr. Hudson: As the letter B.

Mr. Fryberger: No, I guess it is farther down than that.

Mr. Bailey: Yes; it is away down in here.

Mr. Hudson: Oh, A.

Mr. Fryberger: Yes.

Mr. Hudson: Let the record show A instead of B.

Q. Now, Mr. Swenson, that is what you want to indicate as the channel that the larger boats took down from the south end of Big Island to the south end of Grassy Point?

A. Well, the larger boats take either route, through the short-cut or through around west of the island.

Q. Isn't it a fact that this is very much the deeper water?

Mr. Bailey: Which?

Mr. Hudson: In this old channel, around west of the island, and the channel wider.

A. It is wider.

Q. Wider?

A. But I don't believe it is any deeper.

Q. Well, there is a point I show you there, 24 feet.

A. Yes.

Q. And 26 feet, and 27 feet, and 25 feet. Can you find any figures as high in the other channel on this map, on the south channel?

248 Mr. Bailey: That is not quite what you asked him, Mr. Hudson, it seems to me.

Mr. Hudson: Will you repeat the question, Mr. Reporter?

Mr. Bailey: You asked him about the channel as a whole.

Mr. Hudson: Oh, the channel as a whole.

Mr. Bailey: You are pointing out pot-holes now.

Witness: That is the way I took it.

Mr. Hudson: I will withdraw that question. I do not think it is important anyway.

Q. Now, Mr. Swenson, this south channel, or the channel south of the island, was a very much shorter channel or shorter distance, wasn't it, from the south end of the island to Grassy Point, than it was going away around the old channel to the west of the island?

A. Yes, sir.

Q. And the boats that they used in those early days never drew more than 7 or 8 feet of water, did they—6 or 7 feet?

A. I don't suppose they did.

Q. And they could get through wherever there was a depth of water of 6 or 7 feet, couldn't they?

A. I don't believe they could get through 6. Probably they could. I don't know what water they drew.

Q. Well, seven or eight feet.

A. I don't know how much water they drew.

Q. And they took that route because it was the short route; wasn't that the chief reason for taking it?

A. I suppose so.

Q. It was the short route. Now, when you get down here

249 to near Grassy Point and from the point that was marked C to A on Minnesota Exhibit 3, the shortest route there is the route that you have described on this map with a pencil, isn't it?

A. Yes, sir.

Q. And that shows depth of water 7, 9 and 10 feet, doesn't it? 7, 9 and 10 feet (pointing on the map).

A. Yes.

Q. And that route was taken largely because it was the shortest distance, wasn't it, across there, and the boats that went over there did not draw any more than 5 or 6 feet of water, or 7 feet?
A. I suppose so.
Q. Well, isn't that a fact?
A. I have no way of knowing the reason why they did it.
Q. You simply know they did do it?
A. Yes; I have seen them go, I have seen them do it, and I knew they did it, and the reasons they had for it I didn't know.

(A short recess was here taken.)

Cross-examined by Mr. Gard:

Q. Mr. Swenson, when did you say you begun to navigate these waters here in question?
A. When did I begin?
Q. Yes.
A. You mean the first time I was out in a row-boat?
Q. Yes; you may tell us as nearly as you can; we do not expect you to tell exactly.
A. I was perhaps three or four years old.
Q. Yes; and then you were out in a row-boat more or less, I suppose, when you were a boy?
A. Yes, sir.
Q. And your row-boat of course did not draw much water?
250 A. No.
Q. And you went anywhere you wanted to go on the bay?
A. Yes, sir.
Q. And you did not try to follow channels of course?
A. No, sir.
Q. Did not have to follow channels?
A. No, sir.
Q. And how long did you navigate in row-boats?
A. How many years?
Q. Yes.
A. Well, up to the present time, more or less.
Q. You have always navigated in row-boats, haven't you? Did you ever have any other kind of a boat than a row-boat?
A. I never owned anything else; no, sir.
Q. Did you ever run on any other kind of a boat? I believe you said you did not.
A. I never worked on them, no; I rode on them.
Q. What boats did you ride on up the St. Louis?
A. Different ones, tugs and boats and launches.
Q. Never worked on them, though?
A. No, sir.
Q. Just as a pleasure trip, or what? How did you come to be on them?
A. Yes; or, for instance, I had logs to tow down to the mill; I would go along with them, and so on.

Q. Did you have logs to float down to the mill from your present residence?

A. Yes, sir.

Q. When?

A. Back in the '80's.

Q. And you went around the north channel of Big Island, did you, when you towed the logs down?

251 A. Yes, sir. Well, I didn't have any to tow from above Big Island.

Q. I did not get that.

A. The logs I had to tow, we didn't have to come from Big Island with them, down the river.

Q. Where were they?

A. They were in Spirit Lake and along on the Minnesota side where I live, around where I live there.

Q. And of course in taking logs you took the nearest course that you could take, where there was no obstruction, didn't you?

A. Yes, sir.

Q. Did you ever tow logs, or pole logs?

A. Yes, sir.

Q. In poling logs you wanted to keep out of the channels, didn't you?

A. Well, I didn't want the deep water; I wanted water enough to float them without grounding.

Q. How much water does it take to float logs?

A. It all depends on their size.

Q. The logs that you poled, how much water did it take to float them?

A. I would want three feet of water.

Q. That was all that was necessary?

A. That was all that was necessary.

Q. And you would go anywhere that there was three feet of water?

A. Yes. Sometimes occasionally with a big butt I would want a little more, but very few logs we needed deeper water.

Q. And you took the most direct route you could take to get to your destination, didn't you?

A. Yes, sir.

Q. Now, when you rode up and down the river in your boat, you took the nearest course, of course, didn't you?

252 A. I did, unless I was trolling or fishing or something like that.

Q. And then you were going to the fishing ground, wherever that was?

A. Well, of course we fished all over. When the fish would not bite in one place we would try another.

Q. Now, Mr. Swenson, you said that you did not know of logs being towed south of the Big Island; did I understand you to say?

A. Oh, there were a lot of logs towed, millions of feet towed from Fond du Lac down.

Q. South of Big Island?

A. Yes, around the Big Island.

Q. On the south, through the south channel?
A. You mean the west channel.
Q. Well, the west channel.
A. Around the west side of Big Island, towards the Minnesota shore, you mean?
Q. No, I mean south, nearest the Wisconsin shore.
A. What we call the short-cut?
Q. Yes, the short-cut.
A. Well, I don't know—yes, they did tow logs through there, but I suppose that was because they had to. There was a time when a lot of logs came down the river; the boom broke at Cloquet. They stretched the boom across the channel from Big Island over to the Minnesota side, south, straight across, and sheered them into this short-cut channel and held them there until they could sort them and boom them up. I don't know of towing any rafts there otherwise, outside of that.
Q. Don't you know there were boom logs in the vicinity of the Devil's Elbow, placed there to keep them in the right place?
A. Well, that is what I was thinking of now, what I was
253 testifying about now.
Q. There were logs towed through there?
A. That was one season that happened; I worked on that; that happened because the logs broke away from Cloquet, broke and came down the river. The mill company's boom broke at Cloquet, and to save them from going into Lake Superior they stretched a boom across the channel from Big Island, across south, straight across, to what we call the meadow, so they had to turn in to the short-cut channel, and they stretched the boom across the lower end of that and held them there until they sorted them; had a sorting gap and sorted them. I worked there two weeks, sorting logs; it took about two weeks, I think. That is the only time I know of logs being there.
Q. You say that was at the south of Big Island? You mean north of Big Island, don't you?
A. No, sir.
Q. South of Big Island?
A. Yes. Where they had the sheer boom?
Q. Yes. No, not where they had the sheer boom, but where the sorting of logs was.
A. That was on the east side of Big Island.
Q. On the east side?
A. Yes.
Q. In which channel?
A. In the short-cut channel, what they call the short-cut, on the east side of Big Island.
Q. Where did they have the boom across the channel?
A. On the south, right about where Whiteside's house is now. Well, right from the elbow, right from the elbow, across.
254 Q. I see. There is a good deal of water comes down the St. Louis River in the spring, isn't there, Mr. Swenson?
A. Yes, sir.

Q. And there is considerable water comes down the St. Louis the year round, isn't there?

A. Well, especially after heavy rain.

Q. Well, there is always considerable water flowing in the St. Louis, isn't there?

A. Yes, sir.

Q. But in the spring of the year there is high water, isn't there?

A. It all depends on the amount of snow of course that we have in the winter.

Q. Yes, but you usually find high water in the spring of the year, don't you?

A. In the olden days the lumbermen always figured on the June freshet for the most water; that is the time they drove their logs.

Q. And there was usually high water then?

A. High water in June.

Q. And there is a current all the way down the river, isn't there?

A. Yes, sir.

Q. Are you familiar with the waters all the way down to the natural entry?

A. To some extent, yes.

Q. You know of that current continuing all the way down, don't you, to the natural entry?

A. Yes, sir.

Q. And that follows the channel, doesn't it, as near as you could observe?

A. Well, I happened to be on a raft of logs that broke away—I think it was the spring of 1880; Miller's boom broke at
255 Thompson; about a million feet came down; and the ice was not out of the bay yet, and the logs came down. We started to try to make a boom around them, out of logs and chains, up south of Big Island. They forced their way through the ice ahead of them, and went through the entry, between Rice's Point and Connor's Point, and when they got through that entry they turned to the left for the Duluth entry. We left Grassy Point, if I remember right, in the morning, and at noon we had our dinner on Minnesota Point. They turned to the left, they turned to the Duluth entry.

Q. That was after the channel was cut through Minnesota Point?

A. Yes, sir.

Q. At Duluth?

A. Yes, sir. And we could not get the boom around, we could not get the boom made around them, they kept zig-zagging and working around them, so we could not get the boom. They stretched scows across the Duluth canal to hold them from going in the lake. In the morning when we woke up the scows were gone and the logs were gone, out of sight, out in the lake. The ice was gone. The ice was hard up to the shore in the evening, and in the morning it was gone, and the logs. That is the route the logs took that time. I think it was the spring of 1880.

Q. Spring of 1880?

A. 1880 or 1881.

Q. And where did you find the logs?

A. Well, I don't know how many they found of them; I don't suppose they found very many or saved very many of them.

256 Q. Then you did not have any doubt about there being a current all the way down?

A. Oh, there was current, yes.

Q. And there is a current all the way down to the entry, whether it is the Duluth entry or the Superior entry, isn't there?

A. There must be.

Q. Yes. And sometimes that current is disturbed by these tides you speak of coming in?

A. Well, they are regular tides.

Q. That is regular rising and falling of the water?

A. Yes, sir.

Q. You think it raises about two hours?

A. About every two hours.

Q. And then falls about two hours?

A. About every two hours, as nearly as I can judge.

Q. But you don't know of any regular tide that occurs each day caused by the sun, the attraction of the sun, do you?

A. I do not know what it is caused by, but there is a tide I know.

Q. That is the every four hour tide you speak of?

A. I don't know what you would call it.

Q. I say it is a tide that goes up for two hours?

A. It will go up for two hours and then come down the other way every two hours.

Q. Were you familiar with the current of the St. Louis River before the Duluth canal was cut?

A. Well, I was pretty young when that was cut.

Q. You were not familiar with the current out to the

257 natural entry, then, before that was cut?

A. No.

Q. Those logs that you speak of floated down from where?

A. These logs that went into Lake Superior?

Q. Yes.

A. From Thompson.

Q. Where is Thompson located?

A. That is where the dam is now, the Power Company's dam is now.

Q. They were put in the river there?

A. The boom broke and the logs got away, came down the river, and they went into Lake Superior.

Q. How long were you bringing them down?

A. Well, I think we left Grassy Point in the morning; just about half a day from Grassy Point to—well, we got out in what we call Duluth bay or Superior bay, right between the two, right out at the Interstate bridge at noon, and we got out so we got pretty close to Minnesota Point, and we went ashore and had dinner there—I remember it well; they kind of slacked up there and did not go so fast.

Q. Were they being carried by the current?

A. Yes, sir; forced the ice ahead of them, broke the ice ahead of them; the ice wasn't quite off.

Q. Oh, they were breaking the ice ahead of them?

A. Yes.

Q. And there was no power there to propel those logs down except the current?

A. No, sir. There was a heavy current at that time, a lot of rain; caused a heavy current.

Q. In your experience in the waters in question, you know that there was quite a deep channel, do you not, between Grassy
258 Point and the Wisconsin side?

A. Yes, sir. I worked here in what we call the middle grounds; as we call this shallow water right along here.

The Commissioner: Referring to what, Mr. Gard?

Mr. Gard: Referring to what is marked "mud" with surroundings 5 feet, usually, opposite Grassy Point.

The Commissioner: On what map?

Mr. Gard: On Wisconsin Exhibit 1.

Q. Now go ahead, Mr. Swenson.

A. Some of these logs I was telling you about going down to Lake Superior, the large ones, hung up on this middle ground here, quite a number of them; worked there about two weeks, three of us there to roll them off after the rest had gone on into the lake, and saved them. We came over here on this point here. (Indicating.)

Q. That is the point on the Wisconsin side, opposite Grassy Point?

A. Yes; the channel is close up to the bank there.

Q. You mean the Wisconsin bank?

A. Yes.

Q. Now, I want you to follow what you consider the main channel of the stream up the river from that place.

A. Well, what I consider—I don't know—what do you mean?

Q. I want what you call the main channel of the stream.

A. Well, now, I don't know which would be the main channel, this channel here, this short-cut, or the other.

Q. Well, where is the deepest water?

A. I consider the short-cut fully as deep as the other.
259 Q. Before you get up there, follow what you call——

A. I always considered it so.

Q. What do you consider the main channel from Grassy Point here, upward? (Indicating.)

A. Well, I don't know which I would call the main channel.

Q. As a matter of fact was not the channel here that is marked H commonly known as the main channel?

A. No——

Q. What?

A. I don't know as I ever had that pointed out to me definitely as a main channel.

Q. Well, it is quite a channel, isn't it?

A. There is a channel there, yes, but there is a shoal over here, you see.

Q. But don't you know of that being referred to as the main channel?

A. No.

Q. What channel do you know as being referred to as the main channel—any channel?

A. Well, I—I don't know how to answer that.

Q. Did you ever hear any channel being referred to as the main channel?

A. Of course this channel down here was always considered the main channel.

Q. You are pointing now north of Big Island?

A. Yes.

Q. Going north of Big Island you considered that the main channel?

A. Yes.

Q. And you say you know of——

A. Down here—I don't know which was the main channel down here.

Q. You know it is the deepest, don't you?

A. What is called the main channel?

260 Mr. Bailey: You are pointing about to this Swampy Island in there?

Witness: Yes.

Q. You say you don't know which is the main channel?

A. No.

Q. You know which is the deeper, don't you?

A. Run both ways, this way and that way, but mostly this way (indicating).

Q. That is mostly the short-cut?

A. Yes, when they wanted to go into Milford and Keen's creek for logs.

Q. Now, Mr. Swenson, you know that boats went up this channel marked 11 and went around the north channel, what you call the main channel north of Big Island, don't you?

A. Yes.

Q. And they frequently went around that channel 11?

A. Yes; they could.

Q. And continued in the north channel around Big Island, didn't they?

A. This is the route.

Q. Now just answer the question.

Mr. Bailey: Let him answer.

Q. What is your answer to that question?

The Commissioner: Read the question, Mr. Reporter.

Q. Just let me ask it again. You know that boats frequently went through this channel 8, and then around the channel north of Big Island, up past Spirit Lake?

A. Yes.

Q. And they all went through that channel, didn't they, when they went to Milford?

A. Yes. They couldn't go to Milford very well any other
261 way without crossing those shoals there; see? They could not get there any other way.

Q. And as a matter of fact the travel with boats over these waters here between Grassy Point and the island in the early days, was by small boats, wasn't it,—the navigation?

A. Well, there were very few large ones.

Q. Yes; and they went anywhere they wanted to go, didn't they?

A. Yes.

Q. And they were not particular about finding channels, were they?

A. No, I don't suppose they were.

Q. They took the shortest cut, didn't they, usually?

A. Well, that would be natural of course.

Q. Yes. Did you often observe boats going up and down the St. Louis when you were on these waters here?

A. Yes, sir.

Q. What boats do you particularly——.

A. Of course there were not boats every day; there were probably weeks between boats, months sometimes, you know—sailing boats.

Q. There were?

A. Yes.

Q. What time do you refer to?

A. For instance, back in the '70's and the '80's. Now the most of the boats that they run there then were tug boats, towing logs.

Q. Was there a good deal of towing done at that time?

A. There was a lot of logs, millions of feet of logs towed down the river from Fond du Lac; yes, sir; for several seasons.

Q. One of the witnesses testified that he did not go through that channel marked H in towing logs because it was a circular channel and the logs would hit the shore.

262 A. Well, with long rafts; they had one, two and three rafts, sometimes, behind the other, probably stretched out half a mile. You know in making a circle they would——

Q. Get ashore?

A. Crowd up on the point, on the shore, and they would have a hard time getting them off, they would hang up.

Q. That is probably the reason they did not take that channel H very much, isn't it?

A. Well, that is what I believe.

Q. Because it is circular. The other channel you call the cut-off there, one of the cut-offs, would be a straight channel, wouldn't it?

A. Where do you mean?

Q. I mean from, oh, in the vicinity of Tallas Island down——

A. Comparatively straight, yes.

Q. To Grassy Point?

A. Yes.

Q. Comparatively straight?

A. Yes.

Q. And they could tow logs down there easier than they could go around the curved channel?

A. Yes, sir, sure.

Q. Now, I didn't understand where it was you said you considered the mouth of St. Louis River. I want you to tell me just what you consider the mouth of the St. Louis River.

A. At the Elbow here.

Q. That is at Devil's Elbow, what you call the Devil's Elbow?

A. Yes.

Q. That is at the——

Mr. Bailey: Southeasterly end.

263 Mr. Gard: Yes, the southeasterly end of Big Island.

A. It is a little easterly of the end of the island, a little easterly—southeast.

Q. Where the currents divide, one of them going northerly and the other southerly of Big Island?

A. Yes.

Q. In other words, it is above Big Island that you consider the mouth of St. Louis River?

A. Yes, sir.

Q. When you lived at Oneota do you remember of their always calling it "going up the St. Louis River," going up these waters?

A. If they were going as far as Fond du Lac, why, they would say "going up the river, up to Fond du Lac," or if they were going up to Milford or up as far as the Big Island, why——

Q. They said, "going up the St. Louis River?"

A. Going up the bay.

Q. Didn't they say "going up the St. Louis River?"

A. No.

Q. Never heard that?

A. No. That was commonly called the bay, "going up the bay—going up the bay—going up the bay—going up the bay."

Q. And you never heard that called the St. Louis River, did you?

A. Not down below that, no.

Q. Never heard it called the St. Louis River?

A. No, not that I remember.

Q. When you floated those logs down there, didn't you consider you were floating the boom on the St. Louis River?

A. I don't know as I thought of river or bay or lake or anything else.

Q. As long as you had a current?

A. As long as the logs were moving.

264 Q. You had to have a current though, didn't you, to float them, or they would not float?

A. Oh, no, not necessarily have to have a current. Sometimes we had to pole logs against the wind.

Q. Yes, but you said the current carried them out that time, didn't you?

A. What logs do you mean?

Q. When you took those logs out to the Duluth entry.

A. Oh, the current, yes; that particular batch of logs, yes.

Q. Yes; the current took those out?

A. That was kind of a flood that spring, heavy rains caused so much water that it broke the mill dam, and of course that made a heavy current down the river and the bay.

Q. Mr. Swenson, as a matter of fact, the light draught boats now mostly go south of Big Island or follow what you call the cut-off channel, don't they, in going up the river?

A. Why, I suppose so. Of course those small boats we cannot see much of them from where I live. Of course these pleasure boats, gasoline launches and small boats, they naturally take the short-cut when they come from Duluth and Superior, going up to Fond du Lac. A good many of them come our way, around our side of the island. But I believe more of them go on the other side.

Mr. Bailey: That is the south side?
Witness: On the east side.
Mr. Bailey: The east side.

Q. You mean by that the short-cut?
A. Yes.
Q. That is because it is nearest, isn't it?
265 A. Yes, I suppose so—and fine scenery along through there.

Q. Now, so far as you know, the same reason for taking the short-cut with light draught boats prevailed more in the '70's and in early days than it does now, didn't it?
A. Yes, sir.
Q. In fact there is now more reason for them going around the other channel, because that is dredged now, isn't it?
A. Which?
Q. The northerly channel, the long channel around Big Island.
A. That is shortened some, straightened out and shortened.
Q. Well, it is deeper—it is deep water all the way, isn't it?
A. Oh, yes.
Q. And still they go south of the island, don't they?
A. Yes.
Q. Because it is a short-cut?
A. Yes.
Q. And the same reason prevailed to take them through the short-cut when you were a boy that prevails now, doesn't it?
A. Yes, I suppose so.
Q. You don't know of any different reason, do you?
A. No. I don't know of any different reason.
Q. Did you handle a sail boat very much?
A. I used to; not lately; I used to have a sail boat.
Q. Light draught boat, I suppose?
A. Yes, sir.
Q. How much water did it draw?
A. Oh, nine inches to a foot; hardly a foot; about a foot of water I should say.

Re-direct examination.

By Mr. Bailey:

Q. Just a question, Mr. Swenson, about this Tallas Island. Was there anything of that in the early days when you first knew
266 it?

A. Tallas Island?

Q. Yes.

A. Yes, sir.

Q. Did it enlarge thereafter, spread out?

A. No, sir.

Q. What?

A. No, not only what is called artificial; that was dredged and filled in by a dredge.

Q. Was that formed mostly of sand, or what was the substance that formed it?

A. Sand and mud, overflow of the river, I suppose.

Q. Mostly sand and mud?

A. Sand and mud.

Q. Mixed?

A. Mixed; driftwood mixed on the surface.

Q. Do you know from tradition, or otherwise, whether there was a time within the memory of the earliest inhabitants when there was not anything that appeared above the surface at that point?

A. Well, that might be. The water might have had some effect on it. I know now the river has changed a good deal since I first remember it—the river banks.

Q. A good deal of shifting up there?

A. Yes, sir, especially up above, farther up.

Q. Well, was there in that vicinity of Tallas Island a good deal of shifting?

A. Well, of course you cannot notice there so much as you can farther up, it was so low down there; the marshes were low.

Q. The island itself, the surface of the land part, was not much, if any, above the level of the water?

A. It was very little above; it was some above.

Q. It was of marshy character?

267 A. The center, near the river bank, channel bank, was high, and sloping away back, and the outside was low.

Q. In cases of high water at that point, that is, when there were freshets in the spring, and so forth, a good deal of it was submerged, was it not?

A. Yes, sir.

Q. So that there was very little of it that appeared above the surface in times of freshet?

A. Yes, sir.

Examined by Mr. Fryberger:

Q. I want to ask a question or two. I want to clear up the matter about those logs that came down in the spring of 1880 or 1881. Which was it?

A. Well, I am not sure which; either 1880 or 1881.
Q. Were they the A. M. Miller logs?
A. Yes, sir.
Q. He had a mill at Thompson, did he not?
A. Yes, sir.
Q. And what time of the year was this?
A. This was early in spring.
Q. Early in the spring. Was there a very heavy rain at that time?
A. Yes; yes.
Q. Flood?
A. Yes.
Q. And what happened to his booms?
A. Why, he had a dam up there and the dam broke.
Q. Thompson is about a mile or a mile and a half this side of Carlton, isn't it?
A. It is just where the Power dam is now.
Q. Just where the power dam is now?
A. Yes.
Q. The Northern Power Company's dam?
A. Yes, sir.
268 Q. This tremendous flood caused the dam to go out?
A. That is what Mr. Miller said.
Q. Yes. And the whole flood came down at once and brought the logs and the boom?
A. Yes, sir.
Q. How many million feet were there?
A. I don't know as there was more than a million feet. If I remember correctly it was about one million feet.
Q. The only thing, as I understand it, that you had to do with those logs was that you worked as a river man in getting those logs together to save them from going out in the lake?
A. Yes, sir.
Q. And worked on them several weeks, did you?
A. Yes, sir, I worked after the logs went into the lake; after the main part went into the lake I helped gather up those that were standing on the shore.
Q. What did they do with those logs?
A. I forget what he did do with them.
Q. Those logs were not being towed by you or anybody else?
A. No.
Q. They got away; they were run-away logs?
A. Yes.
Q. Now, the other rafts that you spoke of, that you got out near your house, were logs you were bringing down?
A. What batch is that?
Q. The other logs that you spoke of.
A. What I put in myself?
Q. Yes.
A. Yes.
269 Q. Where were you taking them?
A. I took them off different tracts of land.

Q. Where were you taking the logs?

A. We sold the logs to different parties, Payton and Kimball and Barber and others.

Q. And delivered them at the mills?

A. Why, sometimes we did, and sometimes we sold them and delivered them on the spot.

Examined by Mr. Gard:

Q. When was it this dam broke with reference to the time you were down here in St. Louis Bay? How long before that had the dam broken?

A. This Miller dam at Thompson?

Q. Up there at Thompson, yes.

A. It would not be very long; it would not take the logs very long to come down.

Q. It was not the same day that it broke that you were out in St. Louis Bay?

A. I don't recall. Anyhow they had time enough—no, the Miller batch came down in a bunch, and he gave us a lot of chains and staples and we tried to make a boom around the batch of logs, out of sawlogs, short sawlogs.

Q. Was it the Miller logs you got off of that shoal water up there on Grassy Point?

A. Yes, sir.

Q. You spent some time there getting them off?

A. Yes, sir.

Q. And then it was after that, was it, that you floated them down to the Duluth entry?

A. No, no. The main batch kept going right down. We followed them down till they went into the lake, and then after that we started to pick up those that were stranded on the marshes, along where the water was so shallow that the larger logs were hung up.

270 Q. Where was it that you first went working on the logs, what point of the river?

A. It was somewhere, as I recollect, right north of Big Island.

Q. Big Island?

A. Yes.

Q. And how long did it take them to get down in to St. Louis Bay from there?

A. I know that in the morning we left Grassy Point—oh, I don't know; about eight o'clock in the morning we were there, just east or north of Grassy Point, and by noon we had got through the entry between Rice's Point and Connor's Point, right where the Interstate bridge is, and out in the bay.

Q. How long before that, before you started from Grassy Point with them, was it that you had taken charge of them or had gone on the work up in the vicinity of Big Island?

A. Yes, somewhere in there that I started to work on them.

Q. Yes. How long before they got down to Grassy Point?

A. Did the dam break?

Q. No, I want to know how long it was that you took charge of them.

A. Well, I did not have charge of them.

Q. Well, before you went on the work there.

A. I was just a workman. I think I started the day before.

Q. The day before?

A. Yes.

Q. And the logs were, the most of them, in the vicinity of Big Island at that time, were they, when you started?

A. They all came together, all in a bunch; they were packed together in a bunch.

Q. Did they go north or south of Big Island?

271 A. Well, they went north of Big Island.

Q. North; all of them?

A. Yes.

Q. You don't know how long they had been floating down from Fond du Lac, in that vicinity, do you?

A. No, I do not know, but it could not have been very long.

Q. Well, it was a day or two, wasn't it?

A. Oh, no, I don't think so. I think they had come down in five or six hours.

Q. From—

A. From Thompson.

Q. From Fond du Lac; in five or six hours you think they would be down to where?

A. Probably ten hours.

Q. What?

A. Probably ten hours.

Q. At what vicinity would they be in ten hours, do you think?

A. Well, I could not say exactly, but coming down the rapids it would not take them long to get down to Fond du Lac.

Q. No. I understand that; but after they reached Fond du Lac.

A. They would go the way the water was at that time; the current was pretty swift; they would come pretty nearly as fast as a man could walk.

Q. Was it a common thing in early days for them to float logs down the St. Louis?

A. No, sir. They did it for one or two seasons, I believe, after they improved the river; they improved the river some, blasted out some of the larger boulders and improved it some; they did some of it; some driving down the river; not very much, though, I don't think.

Q. Did these logs spread out very much, or did they hang pretty close together?

A. They hung close together.

272 Q. What kept them together?

A. They encountered the ice. The bay was not open yet; the ice was rotten, but it was not quite open, and they kept together in a bunch; we could walk on them and step from one to the other; they were packed just as close as could be, but we could not get the

boom around. We kept working. We probably had half a mile or more of boom, maybe a mile, but we could not close it.

Examined by the Commissioner:

Q. Mr. Swenson, what is there in the river up above Grassy Point to mark out to the eye the shallow or deep places, if there is anything?

A. What we went by was the rushes; the shallow places were covered with rushes. After the rushes grow up in the spring of the year it is hard to find the channel.

Q. What time of the year do the rushes get their growth, come up through the water?

A. As soon as the water begins to warm up a little they begin to grow and show themselves.

Q. Would they be full-grown by the first of August?

A. They would be full-grown by the first of June, or middle of June anyhow.

Q. Then the deep places would not have any rushes growing up in the water?

A. No.

Q. But they would grow in the shallow places?

A. Yes.

Q. Now let us go back to 1880. You at that time were a young man, about 18 years of age, weren't you?

A. Yes, sir.

Q. Now, there were tugs up and down here in these waters at that time?

A. Yes.

273 Q. About how much water did they draw, do you know?

A. Well, that I do not know; I do not know what they drew.

Q. There is some evidence here that they drew 5 and 6 feet, ordinarily.

Mr. Gard: Some of them.

A. Maybe.

Q. Suppose that in 1880 I was a stranger, and we will suppose I came here to Duluth with a yacht drawing 6 feet of water, and I met you and asked you if you were acquainted with the river, and you said yes; and I said, "I want to go up to Fond du Lac with the yacht". You said you would go up as far as Grassy Point, and I said I would be glad to have you come. Now I ask you how I could get up to Fond du Lac and follow the channel. What direction would you give me?

A. Well, I don't know as a man could direct anybody for any length or distance, and be understood.

Q. What is the reason?

A. Well, it would be a pretty hard thing to do, pretty hard for a person to understand.

Q. Could you make a stranger understand?

A. I know it would be pretty hard for me to understand if somebody undertook to tell me how to go.

Q. Suppose I had aboard this Meade map here; you have seen that.

A. If you had a map along?

Q. We will suppose I had aboard the Meade map. Could you tell me on that how to get up there, with the map?

A. Well, I suppose so.

274 Q. What direction would you give me to keep in the channel around the Big Island? What would you tell me if I was going up there past Big Island. I would ask you how I would keep in the channel. What would you tell me?

A. If I would have the map to show I could tell you.

Q. Would there be anything from the reeds or rushes that would guide me?

A. Why, no. That would be hard unless you were acquainted; it would be hard to tell the difference, to tell one from the other.

Q. Now, you have told me, we will suppose, there were two channels around Big Island, and I a stranger would ask you which one to take, which would be the easier for me to go up.

A. Well, the easiest, one, the shortest one, would be the east channel, east of Big Island; that would be the shortest.

Q. Now, I would ask you which is the safest. Which would you tell me?

A. One would be as safe as the other, only around the Elbow is a short turn. It would be safe enough to go with a tug.

Q. Suppose I said to you, "I am a stranger up here and want to get the easiest channel to navigate, to get around Big Island." What would you tell me?

A. Drawing how much water?

Q. 6 feet.

A. I don't know as there would be any difference one way or the other, outside of the Elbow; I don't suppose there would be anything to make any difference, one side of the island or the other.

275 Q. Now I would say to you that I want to get to Fond du Lac, and after I get above the island, what shall I steer by? How do I know I am in the channel? What would you tell me?

A. Well, I could not——

Q. Could you tell me anything?

A. It would be pretty hard for anybody to tell by the rushes. The rushes are all alike, you might say, and there are openings or pockets between bunches of rushes and even to one side and all, one direction and another. That would be a very hard thing, for a man to direct a person by the rushes.

Q. Could he work his way up by the map, do you think?

A. He could with the map, sure.

(A recess was here taken until two o'clock P. M.)

Afternoon Session.

Stipulation.

Mr. Bailey: It is stipulated that the so-called Tallas Island which is marked on Minnesota Exhibit 3 by the letter K, and the piece of land (or whatever it is) marked "Sand" and designated on that exhibit as L, with the pieces of land or sand (or whatever they are) between K and L, were never surveyed or patented separately from Big Island, shown on said map from the main land of the Minnesota shore, by the United States government.

The Commissioner: Is that stipulation agreed to?

Mr. Hudson: It is so stipulated by all concerned.

Mr. Bailey: Yes.

276 GEORGE F. KELLY was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Hanitch:

Q. Mr. Kelly, you reside where?

A. Superior, Wisconsin.

Q. How long have you lived there?

A. Little over seven years.

Q. What is your business?

A. Abstractor of titles.

Q. And have been in that business how long?

A. About fifteen years.

Q. Are you familiar with the records of Douglas County, Wisconsin, relating to the titles of land on St. Louis Bay and St. Louis River?

A. Yes.

Q. Do you know when the dock line was established on the Wisconsin side in the St. Louis, upper and lower bay?

A. It was established in the year 1899 and approved on the 17th of November of that year.

Q. Have you at my request examined the records of Douglas County relating to titles of certain lands on the Wisconsin side opposite to what is known as Grassy Point?

A. Yes.

Q. Examined all of the records since the establishment of that dock line?

A. Yes, and for some time back.

Q. Have you examined the transfers of the land or of portions of these lands that have been made, starting with I think that is Lot 1, Section 17, wasn't it?

A. Below Grassy Point Lot 1, Section 17, 49-14.

277 Q. And extending southwesterly as far as and including Billings Park?

A. Yes.

Q. Commencing now at the northeasterly edge of these lands, what was the first piece of property that you found had been transferred since the establishment of the dock line?

A. Would you count a tax deed as a transfer?

Q. Yes.

A. Then, lot 1 in Section 49-14 would be the first—Section 17, Township 49-14.

Q. That tax deed ran to whom?

Attorney-General Owen: Objected to as incompetent, irrelevant, immaterial and not the best evidence.

Mr. Hanitch: I would like to state that the reason for presenting the evidence in this form is to save the record from being lumbered up with records; also, that all the records are in Douglas County, Wisconsin, and are under control of the counsel for the other side, and if the facts testified to by the witness are not correct they may be contradicted without inconvenience by the State of Wisconsin.

Mr. Gard: I will just state that the records are no more under control of the counsel on the other side than they are under the control of the counsel for the State of Minnesota. They are under the control of nobody that I know of.

The Commissioner: The records are under the control of the county officials but the witness may go ahead and answer the question.

278 A. It ran to the man who is now assessed as the owner of the property. As I remember, his name was Richardson, W. E. Richardson. I am not positive as to that.

Q. What was assessed by the officials for this land?

Mr. Gard: Objected to as incompetent and not the best evidence.

Q. I will ask one other question: In your examination of the records relating to these titles did you examine the assessment records?

A. Yes.

Q. I will repeat the question: What was assessed as Lot 1 by those officials?

Mr. Gard: Objected to as incompetent and not the best evidence.

A. The description on the assessment records is simply Lot 1, Section 17, Township 49, Range 14, described as containing eight acres of ground.

Q. What does the Government survey show that it contained—Lot 1?

Attorney-General Owen: Objected to as incompetent, irrelevant, immaterial and not the best evidence.

The Commissioner: Go ahead.

Mr. Hanitch: Let me make a suggestion at this time: that all of this evidence goes in under objection.

Attorney-General Owen: Do you mean that all his evidence shall go in subject to the objection?

Mr. Hanitch: Yes.

Attorney-General Owen: All right.

A. Nine-tenths of an acre.

Q. What, if you know, constituted the balance of the
279 eight acres?

A. I would judge from the way it appears on the assessment roll the balance of it consisted of the land under water between the original meander lines and the present dock line.

Mr. Owen: I move to strike out the answer as a conclusion of the witness.

Q. Was the land afterwards transferred by tax——

A. By tax deed.

Q. There were subsequent tax deeds, were there?

A. Yes, sir.

Q. State if the assessment records show the same assessments of lands involved as the one you have already described?

A. I don't quite understand the meaning of your question.

Q. Do the descriptions go by the assessment rolls—correspond with the descriptions which you have already testified to as to this first tax deed?

A. Don't you mean there the description in the tax deed?

Q. No; I mean the subsequent tax deeds were based upon the assessment roll?

A. The description was the same both in the tax deed and on the assessment roll except that there was no mention of any acres in the tax deed.

Q. Was there more than one tax deed?

A. Yes, several.

Q. In the issuance of these tax deeds was the same description of land given in the assessment rolls as given for the first tax deed?

A. I didn't look clear back to make sure that all of them were. All that I noticed were.

Q. Passing from the land that you already testified about, to the southwest along the shore, what tract of land was next trans-
280 ferred?

A. The next one was a piece of property that is owned by C. A. Chase—his residence.

Q. How was that transferred, by *meets* and bounds, or Government lot description?

A. *Meets* and bounds description.

Q. Were those *meets* and bounds within the dock line?

A. Entirely.

Q. What tract southwest of that was next?

A. Do you mean next in position as we go down the shore or next in point of time?

Q. Next in position as we go down the shore.

A. The next was a piece of ground owned by B. C. Cooke described in the same manner.

Q. Then following down the shore reaching the land that is generally known as Billings Park, how was that transferred?

A. By a *meets* and bounds description.

Q. By whom and to whom was that transferred?

A. By the trustees of the estate of Frederick Billings to the City of Superior.

Q. Was there one or two transfers?

A. Two.

Q. How was the land described in those two transfers?

A. I can't tell you the exact descriptions, but they began at a certain point which I think was on the section line and followed out a *meets* and bounds description over an irregular shaped tract extending out to the dock line, for some distance on the dock line and back over another line around the point of beginning.

Q. Do any of the transfers since the dock line has been established undertake to reach out beyond the dock line?

A. No.

281 Q. The dock line which you have testified of is the Wisconsin dock line or the dock line on the Wisconsin side?

A. The dock line on both sides were established at the same time.

Q. The one that you referred to is the one established on the Wisconsin side?

A. Yes, nearest Wisconsin.

Q. And was the one established by the Federal Government?

A. Yes.

Q. And approved by the City of Superior?

A. (No answer).

282 D. E. STEVENS was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. You are a resident of the City of Duluth, Captain Stevens?

A. Yes, sir.

Q. And have been for how long?

A. About 48 years.

Q. What year did you come here?

A. In 1871.

Q. And you are how old?

A. I am 54.

Q. So you were about six years old when you came?

A. Yes.

Q. Where have you lived since you came to Duluth, principally?

A. When we first landed in Duluth we lived down on what is called Park Point, now Minnesota Point, below the Canal, lived there a year or so, then moved over on to Rice's Point, lived there quite a

number of years, 15 or 20 years, and then have lived ever since then up in the West End.

Q. Up in the West End of the city?

A. Yes.

Q. That is up near Oneota?

A. No, at Twenty-third Avenue West.

Q. That would be on St. Louis Bay, would it not?

A. Just above the bay.

Q. You are now engaged in work at the Minnesota Steel Plant, are you?

A. Yes, sir.

Q. And were you for some terms a member of the City Council of the City of Duluth?

A. I was.

Q. How many terms?

A. One term.

283 Q. Were you for some time a member of the Board of Education of the City of Duluth?

A. I was.

Q. How long were you a member of the School Board?

A. Nine years.

Q. In the '70's and '80's were you engaged in navigating the waters between what is Wisconsin and Minnesota Point to say Fond du Lac at any time?

A. Yes, sir.

Q. How long and to what extent?

A. The first was working with my father, scowing wood. That's when I was twelve years old, twelve, thirteen and fourteen, three summers.

Q. That would be about '78, somewhere along there?

A. '78 and '79, about.

Q. Where were you hauling wood from and to?

A. From Huegier Island and upper St. Louis Bay, at the upper end of upper St. Louis Bay.

Q. What do you mean by Huegier Island?

A. They call that Big Island.

Q. Was it so named because of a family which lived there?

A. There was an old French lady by the name of Mrs. Huegier and her son lived there at that time.

Q. August Huegier was his name?

A. I don't remember. I knew him, but we always just called him Huegier.

Q. After the time that you have just spoken about were you later engaged in navigating these waters?

A. Yes, sir.

Q. And to what extent and in what way?

A. In 1885 I got my pilot's papers and bought a half interest in a tug. From that time on I was navigating the river regu-

284 larly right along for years.

Q. Did you- work take you out over the lake; that is, I mean down Lake Superior?

A. At times, not often in those early days.

Q. By what name were those waters known from Rice's and Connors Point up to the upper end of Big Island; that is, when you operated?

A. The St. Louis Bay.

Q. Was it known as upper and lower St. Louis Bay?

A. That's what we called upper bay and lower bay.

Q. It was all called St. Louis Bay?

A. All St. Louis Bay, yes.

Q. And the dividing line was where between the upper and lower?

A. Well, I couldn't say where it was.

Q. I mean was it substantially at Grassy Point?

A. Yes, yes, the point there.

Q. Have you navigated clear up to Fond du Lac?

A. Yes, sir.

Q. At what point was the mouth of the St. Louis River as you understood it in those days?

A. I considered the mouth of the river was somewheres at the Big Island. When we were going up or coming out going into the river and out of the bay. I don't know just where it was.

Q. Mouth is a big thing sometimes. Calling your attention to Minnesota's Exhibit 3 I will ask you, in passing Grassy Point going up towards Fond du Lac what was the main navigated and navigable channel from that point up?

A. From A.

Q. Yes, from starting point marked A, Grassy Point, what was the main navigated and navigable channel or course?

A. What is this, D?

285 Q. Yes.

A. After we get to the sound end of Grassy Point then followed that red line from A to B and B to D through the cut-off, was the main navigated channel.

Q. And the course usually taken by all kinds of traffic?

A. Yes, sir.

Q. Was there another channel to the south of that anywhere?

A. Several channels south.

Q. Several channels south of it?

A. Yes.

Q. How many?

A. There are two channels. One was a flat.

Q. I mean to the south of this line that you have just indicated?

A. Yes. I was figuring that out. There is one channel there, definite channel, and the rest,—there were two flats, but they weren't—there was no—bull rushes in them, and one next to the shore and one a small one between.

Q. That is an E there and that is an F up there, if that is what you were referring to.

A. That red line is practically where that channel is, then.

Q. Now let's get it on the record. What you are pointing to is the line marked E curving to the left and ending up at F?

A. Yes, sir.

Q. What about that? Do you say that was a well-defined channel?

A. That was a small channel.

Q. Did you take it at times going up and down there?

A. Very seldom.

Q. I say, did you take it at times? Have you been over it?

A. Yes, sir, I was over it very seldom.

Q. That was not used as much as this other one?

A. No.

286 Q. You say there was still another one south of this?

A. That was southwest, right along up to there (indicating).

Q. Now you are pointing to a point just westerly of the line marked E-F, are you?

A. Yes.

Q. You say there was a channel in there also?

A. Channel in there and before we got in to the cut-off channel. It flattened out there, pretty shoal, so we never used that channel.

Q. Now calling your attention to this curved whitish line that is marked H, did you use that in navigating that unless you were going to Milford?

A. No, sir, never used that without we had some business up that way.

Q. You say you never used that unless you had some business up that way?

A. No, sir, never used it.

Q. You say "we"; do you mean by that that it was not—that traffic generally did not use it?

A. I never used it.

Q. Did you know of its being used except for that purpose, that is where there was business up there at Milford or up in that direction?

A. No, I don't remember.

Q. Now, what if you know, Captain, is the fact with reference to whether the bottom of this water area here changed from time to time by filling in or otherwise?

A. I never noticed much change in the water in the upper bay. I have noticed change further up the river, away up, bars form. I couldn't say that I have noticed any particular changes in that upper bay.

Q. I guess I neglected to ask you: Suppose that when you were going up north of Big Island, then what course would you take?

287 A. A to B, north of the island.

Q. That isn't marked there, but this line is marked C.

A. Well, to C.

Q. On what line, substantially, from the point marked B?

A. On the red line about C, and then followed the—of course this channel is changed.

Q. Then following the crooked whitish line further on?

A. Yes, sir.

Q. Did most of the traffic go southerly or northerly of Big Island until the new channel was dredged by the Government?

A. Southerly of Big Island.

Q. Do you know whether or not there are tides in these waters extending up as far as Fond du Lac?

A. There are.

Q. And have been——

A. Well, tides—current would set up at times; depend on the wind.

Q. They are currents, then, sometimes call them tides?

A. Yes.

Q. State what you know about that, what the fact is?

A. During the summer time when there wasn't much water in the river, why, the river clear to Fond du Lac would be right at a standstill, the current. The wind would go into the northeast, the current set up, and when the wind went down the current would set down, and it varied that way sometimes two or three times a day.

Q. Out in there what you have described as lower St. Louis Bay, was the water much the same in depth clear across from one shore to the other out there, or was it much deeper in places than in others?

A. Well, it was quite uniform, the depth in the St. Louis
288 Bay. After you got up to the upper end of it just northeast of Grassy Point you had to leave the Wisconsin shore out towards the—made a curve around there to get into the deeper water. Here's where the shore is (indicating).

Q. You point here along the center east and west of lower St. Louis Bay where you say that the water was about the same clear across?

A. Yes.

Q. You said you never or seldom went around this curve marked H unless going to Milford or had some business up in that direction, as I understood you, did you—that is this around there (indicating)?

A. I don't remember of ever seeing that channel.

Q. Well, did you know about there being a bar or shallow place over at the westerly end of this curved line H?

A. No, I didn't know about that bar.

Q. Didn't go around there?

A. No, sir.

Cross-examination.

By Mr. Gard:

Q. When did you say you got your license, Captain Stevens?

A. I think it was '85, '84 or '85.

Q. And what boat did you operate?

A. At that time it was a tug, Pridgeon, John Pridgeon.

Q. Whose tug was that?

A. I bought her.

Q. Did you own her?

A. Yes, sir.
Q. Is that the first boat that you operated?
A. Yes, sir. Well, no, I was for three years prior to that, you know, on the wood scow.
289 Q. For whom, yourself?
A. For my father.
Q. With your father?
A. Yes, sir.
Q. How much water did your wood scow draw?
A. I think as near as I can remember about four feet.
Q. And you were hauling wood down from what place to what place?
A. From all over around up on that upper bay down to the harbor here supplying wood for the steamboats that came in.
Q. Where did you land it usually?
A. At Primer's dock.
Q. Where was that located?
A. It was down just this side of the canal.
Q. The Duluth canal?
A. Yes, sir.
Q. And then you got the tug that you speak of?
A. Yes, sir.
Q. How long did you operate that?
A. I operated that tug myself for eight or ten years just approximately; something like that.
Q. What were you doing with it, Mr. Stevens?
A. Towing brownstone from Fond du Lac was the biggest job I had at that time.
Q. How often did you make trips to Fond du Lac?
A. Well, some seasons we would make more trips than others.
Q. About how many trips did you make?
A. There was one season we averaged pretty near a trip a day; sometimes we made two trips in a day, in 24 hours.
Q. And in bringing that sandstone down you came the cut-off, didn't you?
A. Yes, sir.
Q. Always, didn't you?
A. Yes, sir.
Q. Because it was the nearest?
A. Yes, sir.
290 Q. Did you ever haul cordwood from above Big Island?
A. Yes, sir.
Q. What part above Big Island?
A. From off the shores of the river at different places.
Q. With your scow or with the tug, which do you mean?
A. Well, I towed scows down there loaded with wood for the Lime Kiln people.
Q. From the Lime Kiln people?
A. Yes. That was later on.
Q. And you went through the south channel?
A. Yes, sir.

Q. And what other business did you have with your tug above Big Island?

A. I towed logs from the Fond du Lac boom for quite a number of years down to the different mills.

Q. From Fond du Lac?

A. It was what they called the Fond du Lac Company's boom up there.

Q. Where was it, at Fond du Lac?

A. About a mile below Fond du Lac.

Q. Near New Duluth, above New Duluth?

A. Above New Duluth, yes.

Q. And in towing these logs which way did you come down?

A. Through the cut-off.

Q. And what else did you haul from above Big Island?

A. Wood, logs and brownstone, that is all, practically.

Q. And you used the cut-off channel southerly of Big Island?

A. Yes, sir.

Q. Do you know how much nearer that channel was than the other channel around northerly of Big Island?

A. No, sir, I never measured it; it's considerably nearer.

Q. You knew it was substantially nearer?

A. Yes, sir.

291 Q. And that is the reason you took it, wasn't it?

A. Yes, sir.

Q. Did you ever go to Milford?

A. Yes, sir.

Q. With your tug?

A. In the early days I have been in there when I first started tugging, got logs in there in Milford slough.

Q. How often did you go to Milford do you think?

A. Very seldom.

Q. Just a few trips you mean?

A. Just once or twice, something like that, I remember going in there.

Q. Do you remember which way you went in?

A. No, I couldn't say exactly. Went across in there. There are some channels in there and I had to pick them out to get in there.

Q. Would you undertake to say which way you went to Milford? Could you undertake to say which way you went?

A. Yes, I think I could if I had a map that showed it. I could show pretty near which way I went in.

Q. Can you tell without a map which way you went?

A. I remember coming out through a narrow channel there that ran out in to the main—the channel coming from Spirit Lake.

Q. I will ask you if you are familiar with the Meade map?

A. No, sir.

Q. Did you use any map in navigating the waters of the bay and river?

A. No, sir.

Q. Just was governed by your knowledge of the waters?

A. If we weren't sure where we were going we took a pole to help

along. There was a little channel in through here (indicating) quite deep water, and it was narrow, got in and got around in here some place.

Q. Which way did you go in, do you remember?

292 A. Then there was only 5, 6 or 7 feet of water. There might be some deep holes in there.

Q. You mean in next to Milford?

A. Up through after you left this deep hole out here.

Q. You mean H, channel H?

A. Yes, sir.

Mr. Fryberger: The record doesn't show anything as to where he pointed out.

Q. Mr. Stevens, I will ask you to locate where you think Milford was located?

A. Here is Milford right there (indicating)—the old mill.

Q. Not the place that you were pointing to before this?

A. I am mistaken. Here is Milford right there (indicating). This is that deep slough that ran up in there. I have located myself. That slough where the brickyard is. Brickyard right here (indicating).

Q. You are pointing to the first slough westerly of the one that you now locate Milford on, are you, when you say the brickyard?

Mr. Fryberger: That really doesn't mean anything on the record.

Mr. Gard: Now you can cross-examine this witness.

Mr. Fryberger: No, I can't.

Mr. Bailey: Is it not a fair statement to make here, that the point that he now points out as Milford is the projection at the westerly and two dots just east of it?

Mr. Gard: I haven't suggested it is.

Mr. Bailey: Isn't that what he pointed to?

293 Mr. Gard: I am asking him to locate Milford.

Mr. Bailey: How do you want him to locate it in the record?

Mr. Gard: I want him to point to the place and I will locate it in the record.

Q. Will you point to the place that you locate as Milford?

A. (Witness indicates.)

Q. Now then, you point to a place——

Mr. Bailey: Won't you make some statement that will indicate anything on the record as to where he points?

Mr. Gard: I was going to, wasn't I, Mr. Bailey?

Mr. Bailey: I understood you were starting off to ask him about something else.

Q. Make a cross where you consider Milford was located?

A. (Witness indicates.)

Q. You have made a cross now at the place where you considered Milford was located?

A. Yes, sir.

Q. Now state how you went into Milford when you went in there?
A. We went right across straight into Milford.
Q. Across from where?
A. From the deep water out here.
Q. That is, you are pointing to the channel now marked H?
A. Yes, sir.
Q. At the westerly end of the channel marked H, that is to the westerly part of it?
A. No, this would be the end up here. We leave that channel down here (indicating).
Q. At the northerly part of it; is that right?
A. Yes, be the northerly part.
294 Q. Then go straight over to Milford?
A. Practically straight over there there is a bay in there.
Q. You went up channel H marked H on this Wisconsin's Exhibit 1, didn't you?
A. I don't remember whether we would go up H or go right across here (indicating). It was practically the same thing right through here.
Q. You just stated a while ago that you went straight from the northerly point of channel H, is that right?
A. Practically right.
Q. Then if you went across from there you went up channel H all the way, didn't you?
A. Not necessarily. I don't know exactly how we got in there.
Q. Would you go across any of that territory there (indicating)?
A. I don't understand the question.
Q. That is, could you navigate that water there anywhere?
A. Yes, sir.
Q. Well, there was deep water in H, wasn't there?
A. The whole thing was a complicated mass of channels and deep holes.
Q. And you think you went across from the northerly or northermost portion of the channel marked H straight to Milford; is that right?
A. No; it would be a little more west than the northerly. You couldn't go straight into any of those channels; but that would be practically the way we got into Milford.
Q. Well now, mark on the map where you think you left channel H to go direct to Milford?

Mr. Bailey: How do you want him to mark?

Q. With a cross.
A. Just about that place (indicating).
295 Q. That cross is in channel H, isn't it?
A. Yes, sir.
Q. You spoke of tide in the waters of the St. Louis. You mean the rising and lowering of the water caused by the wind, do you?
A. Yes, yes. That is what I understand causes the rising and lowering of the water of the harbor.

Q. Did you ever observe how often these risings and lowerings occurred?

A. There was no regular rising and lowering of the waters. Went at different intervals; just depend on the water. Of course when there was a freshet on or a lot of water coming down the St. Louis River there wouldn't be so much of it up the river and up the bays.

Q. You have seen some pretty swift currents come down the river there, haven't you?

A. Yes, sir.

Q. And you have seen that current extend down into St. Louis Bay, haven't you?

A. Yes, sir.

Q. And out in Superior Bay?

A. Yes, sir.

Q. And out at the natural entry into the lake?

A. Out into the lake, yes.

Q. Are you familiar with the channel out in Superior Bay, the channel before there was any dredging done?

A. Yes, sir.

Q. Was there a well-defined channel there before there was any dredging done?

A. Yes, sir.

Q. Do you know——

A. There was in the Superior Bay.

Q. Yes, Superior Bay I am speaking of. I will show you Wisconsin's Exhibit 1 and ask you if the channel is shown on that map substantially as you remember it?

296 Mr. Fryberger: At what point is that?

Q. In Superior Bay?

A. Yes, sir.

Q. From the entrance through Grassy Point——

A. By Connors Point?

Q. Yes, by Connors Point. When the channel went by Connors Point which shore was it closest to?

A. Right close to the end of Rice's Point, the deep water.

Q. On the Wisconsin side which shore was it closest to at Connors Point, I mean?

A. Closest to Connors Point.

Q. And then it crossed over right close to Connors Point there, did it?

A. It went by Connors Point right close.

Q. And up into St. Louis Bay a short distance?

A. Yes, sir, right by the end of Rice's Point.

Q. And was then lost?

A. Then it dwindled out, flattened out.

Q. Out through Superior Bay there was a well-defined channel, definite channel to the natural entry?

A. Yes, sir.

Q. Did you usually follow that in navigating Superior Bay?

A. Yes, sir.

Q. And you have seen a pretty good current in the channel, haven't you, before there was any dredging in the bay?

A. No, never seen any very swift currents down there.

Q. But you have seen currents?

A. Oh, yes, current in and current out.

Q. Which way was the general trend of the current?

A. To and fro.

Q. Didn't the water empty out of that bay and into the lake?

297 A. Yes, sir.

Q. Wasn't there water came down St. Louis Bay and River that went into the lake?

A. Yes, sir.

Q. Then which way was the general trend of the current, was it up or down the river?

A. Spring of the year it would be down the river and the latter part of the season it was practically the same.

Q. Wasn't there water coming down the St. Louis all the time?

A. Very little.

Q. Did the St. Louis practically go dry up at the falls?

A. Pretty much so.

Q. You mean there wasn't any substantial amount of water coming down there?

A. Not enough to make a current to amount to anything.

Q. Do you know how much water came over the falls in dry weather?

A. No, sir.

Q. Never attempted to measure it?

A. No, I have waded across it.

Q. Where the falls are, where the rapids are?

A. Yes, sir.

Q. Ordinarily you couldn't wade across it, could you?

A. No, sir.

Q. At the end of Minnesota Point the channel runs quite close to the point, does it not?

A. Yes, sir.

Q. What kind of a place was there at the entry before there was any dredging done?

A. I don't know. I don't believe that I ever used that entry after I started tugging.

298 Q. The Duluth entry had been made before you started tugging?

A. Yes.

Q. After the channel comes through between the Grassy Point and Wisconsin shore there is a well-defined channel for some distance out in St. Louis Bay, isn't there?

A. Not far out.

Q. There is for some distance?

A. There is a little better water ran out there for a piece and it flattened out.

Q. You see the soundings on this map, do you?

A. No, I can't read them.

The Commissioner: Take this glass.

Q. Read the figures as you go through by Grassy Point in what is marked there as the channel on this map.

A. Right directly south of the end of Grassy Point there is a channel I see 24, 31, 21 and then 31—I am going down.

Q. Where are you there?

A. No, no, further down.

Q. There (indicating)?

A. That's 26. No, that's 31, 26, 30, 24.

Q. 28, isn't it?

A. Well, 28, 30, 30, 45, 36, 27, 30, 25.

Q. What is that (indicating)?

A. I think it is 21.

Q. And then?

A. 15.

Q. That is out in St. Louis Bay quite a distance, isn't it?

A. Yes, just getting out into it. It shoals up there to 14, 15, 10, flattens out there.

Q. So far as you know these soundings are correct, aren't they?

A. As far as I know they are.

Q. Have you any reason to think that the soundings on this map, Wisconsin's Exhibit 1, are any of them incorrect?

299 A. No, sir.

Q. How much water did your tug draw, Mr. Stevens?

A. Just about six feet, that is the first one I ever owned.

Q. That was the one you started to operate about——

A. '84 or '85.

Q. And operated how long?

A. Oh, I owned her for 25 years or more. I operated her myself then for I think seven, eight or ten years; then I bought another tug.

Q. Were there many boats operating on the waters of the St. Louis Bay and River in the '70's?

A. No, sir.

Q. And what were operating were most of them shallow draft, weren't they?

A. Yes, sir.

Q. And they could go almost anywhere in St. Louis Bay, couldn't they?

A. They could in the lower bay.

Q. Well, in the upper bay there was a good many places that they could go, wasn't there?

A. Oh, yes, yes, sir.

Q. And they didn't go in any one particular channel, did they?

A. In navigating that myself I generally kept practically the same channel.

Q. You always went to the south of Big Island, to the southerly of Big Island, when you were navigating, except a few times you went to——

A. Probably I have been around there——

Mr. Fryberger: Speak up a little, Captain.

A. I was sailing it for thirty years and I have been both ways; how often I couldn't say.

Q. And the light draft boats always or usually took the
300 nearest course that they could take, didn't they?

A. I always took the nearest course, shortest.

Q. You spoke of a channel being up in the Kimball Bay, didn't you, one of these bays that are now called Kimball Bay?

A. No, sir.

Q. What bay was it you spoke of the channel going into on the Wisconsin side?

A. I don't think I testified to any.

Q. You testified to a channel going up on the Wisconsin side there, didn't you?

A. Yes.

Q. Where did that go?

A. It swung around and went over into the cut-off channel, going up through the cut-off.

Q. Was there any channel went up into Kimball Bay?

A. Yes, sir, there was a channel, pretty fair water all through it. There wasn't any particular channel.

Q. Well, boats could run up there, couldn't they, shallow draft boats?

A. I ran up in there.

Q. You say there wasn't any particular channel?

A. No, sir, not up in the slough. We called them sloughs.

Q. You know what is now called Kimball Bay, don't you?

A. Yes, sir, I think I do.

Q. You were up in that bay?

A. Yes, hundreds of times.

Q. Is there anything that you would call a channel that goes up there?

A. There is a channel down—it leaves the deep channel down just southwest of the end of Grassy Point and follows the Wisconsin shore, runs up around there and then all of these sloughs run off that.

301 Q. You say it leaves the deep channel down near Grassy Point?

A. Yes, just about the south corner of Grassy Point on the Wisconsin side of the channel.

Q. As a matter of fact, Captain Stevens, boats traversed what you call upper St. Louis Bay without much reference to channels, didn't they?

A. No, sir.

Q. What did the boats draw that were navigating those waters?

A. Well, the tugs I owned is about all I can speak for. Of course I have an idea what some of the other boats—There was the tug Spirit, would draw six feet of water, and the tug Brower; she drew six and one-half feet of water. The tug Mystic, she drew about ten feet, a little better. That was later on.

Q. How late was that?
A. Some time in the '90's, 1890, something like that.
Q. That was after the channel was dredged?
A. That is before.
Q. Do you know when the channel was dredged?
A. No, I do not; I couldn't give the date.
Q. Don't you know it was dredged in '89, '90 and '91?
A. I couldn't say the date it was.
Q. You say this tug that drew ten feet you saw that there about 1890?
A. I couldn't say. I owned her for eight or ten years and I sold her seven or eight years ago.
Q. Where did you go with that tug in what you call upper St. Louis Bay?
A. I was towing logs out of Pokegama Lake with her for two seasons.
Q. Out of Pokegama Bay, you mean?
A. Yes.
302 Q. What is called Pokegama Bay?
A. We called it Pokegama Lake
Q. Then which way did you go down?
A. Down south of Heugier Island, down the cut-off. I was towing up. I towed out of Pokegama Lake up to New Duluth there two seasons.
Q. With a boat that drew how much water?
A. Little better than ten feet.
Q. How did you get in Pokegama Bay?
A. We went through some channels in there. Had to kick out a channel to get into the lake.
Q. You mean let your wheel dredge it out?
A. Yes, to a certain extent. It was hard getting in there around some of these corners.
Q. Now then, you see the figures of soundings on this map. I would like to know how you got in there with your tug. Start from Grassy Point and show me how you got in there? Do you see you are running over water that is only seven feet deep?
A. Yes, sir.
Q. And eight feet deep?
A. It doesn't make any difference; I went through there. This is that island. (Indicating).
Q. Now you have run a line there that runs over soundings of seven feet and eight feet, haven't you?
A. Yes, sir.
Q. And you think you went in there with your tug that draws ten feet of water?
A. I went in there with the tug Mystic drawing ten feet of water.
Q. When?
A. I couldn't tell you that offhand. Before there was any dredging up the river.
Q. About what years was it?

A. It was the time Richard and Poole ran the sawmill up
303 at New Duluth.
Q. About what year, I mean?
A. In the '90's some time.
Q. It was about 1890 then, you think?
A. Yes, sir, I think so.

Redirect examination.

By Mr. Bailey:

Q. Captain Stevens, calling your attention to Minnesota's Exhibit 3 I will ask you whether the line that you just indicated to counsel as the line that you took with the tug Mystic was substantially the line A-E-G-B-D and then on up the channel to the south or east of Big Island and then following the light shaded line into Pokegama Bay?
A. That's correct.
Q. And you say that that tug in taking that course drew ten feet of water and she could get through all right?
A. Yes, sir.

Recross-examination.

By Mr. Gard:

Q. You stated that you had to let the tug dredge some places, didn't you?
A. Oh, she would touch bottom in places.
Q. And you could dredge with your wheel, couldn't you? As a matter of fact, the wheel will dredge out in a short time if it isn't very deep?
A. It won't do it the first time and you can't dredge ahead with your wheel; after you pass over a shoal two or three times with a tug we will generally get better water.
Q. The wheel has a tendency to dredge out, doesn't it?
A. Oh, yes, yes, sir.

By Mr. Hudson:

Q. Do you remember the sawmills that were at New Du-
304 luth that were operated by the B. B. Richards Lumber Company and the Herman Company?
A. Yes, sir.
Q. Do you remember that barges were loaded at those sawmills in the year 1891 and brought down the river loaded with lumber?
A. I remember they loaded some barges, but what year it was I couldn't say.
Q. Do you remember whether those barges came down the river before the natural channel, or the artificial channel, had been dredged out?
A. I think they did.
Q. It was some two or three years before that, wasn't it?

A. To the best of my recollection I think it was.
Q. Don't you know as a matter of fact that those barges in coming down the river loaded with lumber took the channel west of the island, followed that channel down west and north of Big Island?
A. Yes, I believe they did. Of course, that cut-off was a pretty sharp turn for a vessel of any size to make.
Q. But these were large lumber barges, weren't they?
A. No, small lumber barges.
Q. Would draw ten feet of water?
A. They wouldn't put the full load on them up there.
Q. They drew about ten feet of water, didn't they?
A. I don't think so.
Q. You don't think so?
A. No, sir.

(Recess, ten minutes).

305 C. W. McMANUS was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Hanitch:

Q. You reside where, Mr. McManus?
A. Superior.
Q. How long have you lived there?
A. Well, we came there in '63.
Q. How old were you when you came?
A. Three years.
Q. Lived there ever since?
A. Practically.
Q. In your early life what was your business?
A. I followed tugging here in the harbor.
Q. How soon did you commence sailing the waters of the bays at Superior?
A. Must have been about '71.
Q. What was your first work on the boat, Mr. McManus?
A. I was a boy aboard the Agate, passing wood, tending line, looking after the scows.
Q. Did you burn wood in these boats?
A. Altogether.
Q. What type of boat was the Agate? Was she a propeller tug or side wheeler?
A. Very much like the rest of these propeller tugs, smaller, of course.
Q. About how much water did she draw?
A. About six feet and a half.
Q. How long did you stay with that boat?
A. I worked for that concern seven years.

Q. Did you go out with any other tug on the bay or on
306 these waters here at the head of the lakes?

A. Afterwards.

Q. Afterwards, yes.

A. Oh, yes.

Q. What other boat or boats were you on?

A. Well, I was on the John A. Page, Molly Spencer, Amethyst, Frank C. Fero.

Q. About how long did you continue in the boating business?

A. Fifteen or sixteen years altogether.

Q. You say you started passing wood, or firing, I suppose that was?

A. Well, I done some firing as I grew older.

Q. What position did you take after firing?

A. I ran the engine on the boat afterwards.

Q. Did you have a Government license as an engineer?

A. Oh, yes.

Q. When did you get that?

A. I don't remember when I got the first issue. It was before I was legally of age, quite a while.

Q. About how many years did you have an engineer's license?

A. I still carry a license.

Q. After you quit the work of engineer on tugs, what vocation did you take up?

A. I went in to the big steamboat business, steamboat between here and Chicago and Buffalo.

Q. How long did you continue on those boats?

A. About three years.

Q. What business did you take up after that.

A. Railroading.

Q. What position do you hold now with the railroad?

A. Locomotive engineer.

Q. How long have you held that position?

A. Twelve or fourteen years or more.

307 Q. After giving up the tug business did you build or purchase a little steamboat for yourself or your pleasure about the waters?

A. Yes, sir.

Q. While you were in the tug business what waters did you sail?

A. Oh, we was all over this end of the lake and all over the connecting waters here.

Q. Did you run from the Superior Bay up through the other bays as far as Fond du Lac?

A. Yes, sir.

Q. What class or kind of work did you do with the tugs in your trips up and down the river?

A. Oh, we done a general towing business in the way of scows and carrying wood and stone and towing rafts.

Q. About what did these tugs draw in water?

A. They all ran from six feet to nine and a half or ten.

Q. Had the channel been dredged out while you were in the tug business here?

A. I don't think it had, no, sir.

Q. What was the deepest draft boat you worked on in the tug work as engineer?

A. I think the Spencer was the deepest boat.

Q. About how much did she draw?

A. She was down over ten feet quite a little.

Q. Did you use that boat for towing up the river any?

A. No, we never went up above Grassy Point with her.

Q. What was the deepest draft tug you used above the Grassy Point?

A. I have been up there in a ten foot boat.

Q. Well, prior to the dredging of the Government channel what was the deepest draft boat you used?

A. Ten feet.

308 Q. How far up did you go with the ten foot boat?

A. Fond du Lac.

Q. Now, Mr. McManus, coming out of St. Louis Bay and passing up past Grassy Point, where did the channel lie from that point, that is beginning just at the easterly side of Grassy Point where did the channel lie? The channel between Grassy Point and the Wisconsin side lies southwest and northeast, does it not?

A. The old mouth, as we called it, or entrance to the river there, was a little more to the westerly, struck in straight across from Oneota to a point in that direction.

Q. Would that be to the Wisconsin side or to the Grassy Point side?

A. Going from the Minnesota side over to the Wisconsin side.

Q. Well, when you came to the Wisconsin side and opposite Grassy Point how far up the Wisconsin side did you follow before you made a turn?

A. We followed along up there in the neighborhood of three-quarters of a mile; I think possibly a mile up, a mile, up about abreast of where Billings Park is now, in close to the shore.

Q. Closer to the Wisconsin shore than to the Grassy Point shore?

A. Hardly. We were about the middle of the stream there.

Q. Billings Park point would be about half a mile beyond the Grassy Point?

A. Yes. It all of that. I should think at that time it was three-quarters of a mile.

Q. Now when you reached that point, assuming that you were going up the river, what direction would you take from there, what point next would you start for?

A. Why, they would swing on a gradual curve there when we got up by that middle ground swinging off and head for what might be termed the northeasterly end of that island that lies out

309 from the Blast Furnace Dock now

Q. You have heard the testimony here as to there being two channels, have you not?

A. Yes, sir.

Q. One is called the southerly or shortcut channel, that would go to the Wisconsin side of Big Island, would it not?

A. Yes, sir.

Q. And the other channel would go to the northerly side or Minnesota side of Big Island, would it not?

A. Yes, sir.

Q. Now, when you reached the northeasterly point of that island, if you wanted to go up the river by the southerly channel, which direction would you turn?

A. Swing right off to the southerly there at right angles.

Q. If you wanted to go to the northerly side of Big Island and up the river which direction would you take?

A. You would maintain the general course you had been on back from the Wisconsin shore to the Minnesota shore.

Q. Where would this island be, at your left or right as you passed over?

A. Left-hand side.

Q. About how close to the island would you say?

A. I remember we used to go right close to it. The channel was wide, or water was wide; we could go close to it.

Q. Then you went near the Minnesota side and which direction would you swing then?

A. The channel then carried you clear over to the Minnesota side close to the main bank. It was crooked and tortuous and you were over there till you got clear over close to the main land in about a westerly course, I should say.

310 Q. Were those the two course- that were generally used by the boats at that time in going up the river?

A. Yes. They were the only two ways to go.

Q. Prior to the time that the Government channel was dredged out I think you testified that you were on a boat of ten feet draft. Did you ever go up with that ten foot draft boat alongside of this island and north of Big Island?

A. That's the way we went.

Q. Which one of these channels did you use mostly; that is, the southerly that is inside on the Wisconsin side of Big Island or the northerly and Minnesota side of Big Island, which one of these did your boats mostly use in those days?

A. That depended on the draft of the boat. Six and a half foot could go in the cut-off but a boat drawing more water than that would have a good deal of trouble.

Q. You would take the other channel?

A. I would take the other channel.

Q. With the deeper boat?

A. (No answer).

Cross-examination.

By Mr. Hudson:

Q. Mr. McManus, you stated that you commenced sailing the tug Agate in 1871?

A. That was the estimated date. I figured it was about that time.

Q. And that it drew about six feet and a half of water; that's right, is it?

A. Yes, sir.

Q. And you continued to run that boat for about seven years?

Q. Worked on her for about seven years for the concern;
311 not always on this one boat. They had other boats.

Q. Did you use these other boats, the John A. Page and Molly Spencer and Amethyst and Frank C. Fero during that seven years?

A. No, they didn't belong to the same concern; they were different owned boats.

Q. These boats were used after that seven-year period?

A. Yes, sir.

Q. And you used some one of these boats for how long a time, some one of these four boats that I have just named?

A. I was on the Page, for instance, for two years.

Q. On the Molly Spencer?

A. In her part of two years. She was laid up.

Q. And in the Amethyst?

A. I worked on that boat quite a little time; I don't remember; different years; sometimes entire season and sometimes not.

Q. More than two or three years?

A. Something like that.

Q. Well, there is another boat here, the Frank C. Fero?

A. It was only a little while on that boat. She was a ferry boat.

Q. Then you used these four boats over a period of five or six years; is that right?

A. Yes, something like that.

Q. Subsequently you went down the lakes, operated big steamboats down the lakes?

A. Yes.

The Commissioner: About what was the average time of the opening of the season in the spring?

The Witness: Why, it would be generally about the first of May.

The Commissioner: And closed about when?

312 The Witness: Oh, we used to figure on being laid up about Thanksgiving time, sometimes later, but not much.

Q. The earlier years that you operated the boat up the St. Louis River and Bay you did, you said, a general towing business; is that right?

A. Yes, sir.

Q. That is towing logs——

A. This concern that I was with owned a number of scows and handled a great deal of rock, stone. We towed some logs. But that wasn't our general business. Handling these scows, towing rock, was the business principally at the time the canal piers were being built and all this work.

Q. And you say these boats drew seven, eight and nine feet of

water. When you went up the river from Grassy Point you stated that the larger boats took the direction westerly around the small island to the north and the small island that is opposite the Blast Furnace on the Minnesota Side; is that right?

A. Yes; kept off to the westerly, down the main river.

Q. And that in passing to the north of the island you passed quite close to the shore of the island?

A. Yes, sir; small marsh island that lies out from the Blast Furnace.

Q. In passing up the river from that point, as I understand you to say, you took a tortuous route over to the west; was that headed for the landing at Spirit Lake, what we have known late years——

A. Before you got up so far as that.

Q. What direction did you take when you got up there?

A. Why, when we got to the bank, the river, followed the bank around the main bank.

313 Q. You mean the Minnesota——

A. Minnesota side up around by Spirit Lake.

Q. There was quite a deep channel following along?

A. Oh, we thought we had all kinds of water when we got there.

Q. And did that continue up all the way around the west side of Big Island?

A. Yes, sir.

Q. You stated that some of the boats that drew less water sometimes took the cut-off. Do you mean the channel that is east of the Big Island, shortcut?

A. Yes, sir.

Q. But the larger boats didn't take that; is that right?

A. Not necessarily the larger boats; the deeper draft boats. Some of the larger boats which we had went the other way, a great deal larger than these boats.

Q. Went which way?

A. Through the cut-off. The deeper draft boat over six feet and a half couldn't, as I stated, go through the cut-off without a good deal of trouble to get in there. There was water enough after you got in there.

Q. Did they have any trouble passing to the west of Big Island—you said there was all kinds of trouble?

A. Not if they were in the right place.

Q. Well, if you were in the channel?

A. Yes.

Q. Now, you stated when you started in opposite Grassy Point that you went over to the river there at that point; is that right?

A. Over to the river from Grassy Point.

Q. Yes, mouth of the river?

A. Grassy Point was one shore of the mouth of the river.

Q. The mouth of what river?

A. St. Louis River.

314 Q. And what was the other shore of it?

A. Why, it was a swamp on the Wisconsin side as we took it.

Q. Then that is what you regarded as the mouth of the St. Louis River?

A. That's what I understood it as a boy.

Q. Was that so generally understood?

A. That is the way it was understood by me. I have heard others speak of it as such.

Q. Then what you understood to be St. Louis Bay was the body of water that was east of Grassy Point and between that and Connors Point, was it?

A. Yes. That was understood as St. Louis Bay, though at that time, even, I have heard the broader water up above spoke of as the upper bay, kind of a large lagoon; it was all full of rushes and weeds and muskeg, and floating island, and those things.

Q. There were some island- along up there?

A. Yes, but it was wide water from hard shore to hard shore.

Q. Were there a few islands on each side of this deeper water channel up above Grassy Point?

A. Yes; as I remember it there was.

Q. Then at which side of these islands here from what you have stated as the main channel was shallower water, rushes, and so forth——

A. At both sides there was deep water and shallow water both sides.

Q. Where was the deeper water?

A. There was deeper water as I remember now, close in to both shores.

Q. How often did you go up the river in those days from 1871?

A. Why, it depended some on the condition of the weather.

315 Q. When the weather was good——

A. When the weather was bad we worked up the river and when it was good we worked on the lake bringing rock in through both Superior and Duluth entries.

Q. Would you go up the river many times during each season?

A. Yes, sir.

Q. Have you as many as a dozen times a season?

A. Yes, more than that.

Q. Would you think as many as twenty or thirty times?

A. I should think so.

Q. That is, your business was exclusively towing during these seven, eight years?

A. Yes, sir, but not with all of these boats. There was some of these boats that didn't work up the river; for instance, the Page nor the Spencer didn't work up the river; only into Allouez Bay.

Q. I understood you to say in relation to the Spencer in your direct examination that it worked out in the lake?

A. Yes, sir.

Q. I don't remember that you said anything about the Page, but these were the boats that drew the most water, these two?

A. Yes, sir.

Q. And most of the other boats did work up the river?

A. Yes, sir.

Q. And on some one of these boats your business was largely up the river during those years?

A. Yes, sir.

Q. And during those years were doing towing on the river there?

A. Yes, sir.

Q. Different people?

A. Yes, sir.

316 Q. Can you name some of them?

A. Why, yes. Peyton, Kimball & Barber, the tug Cotton worked up there a whole lot after she came here.

Q. They did a towing business, did they?

A. The Amethyst worked up there, H. M. Wheeler's boat, prior to that time, about the time we were working up there.

Q. Are there any other parties that you recall?

A. Yes, the Hattie Vinton done some work up there. She was quite an early boat.

Q. You were acquainted with each of these boats that were doing towing business up there, at least with the masters of the boats?

A. Yes, sir.

Q. Captains and pilots and so on?

A. Yes, sir.

Q. And you have heard them refer to this channel between Wisconsin and Grassy Point as a river?

A. Yes, we always spoke of it as a river.

Q. And that is what you regarded the mouth of the river?

A. I did at the time.

Q. And you did for many years?

A. Yes, sir.

Q. Do you at this time?

A. I did until I heard this testimony today and yesterday.

Q. You didn't testify from a map in your direct examination?

A. No, sir.

Redirect examination.

By Mr. Hanitch:

Q. Witness being shown Minnesota's Exhibit number 3, is asked to look at the same and examine it. Do you see Grassy

317 & 318 Point there marked on this exhibit?

A. Yes.

Q. Now where is that island that you headed for when you left Billings Park point and you said was outside of the Blast Furnace?

A. (Witness indicates on the map).

Mr. Hanitch: Witness points to the island which is marked M.

319 Rec'd July 24, 1917. D. E. Roberts, Commissioner.

FRIDAY, July 20, 1917—10:00 a. m.

The taking of testimony was resumed before the Commissioner Hon. David E. Roberts, as follows:

Captain ALEXANDER McDOUGALL was called as a witness by the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Captain, your full name is Alexander McDougall?
A. Yes, sir.
Q. You are a resident of the City of Duluth?
A. Yes, sir.
Q. And have been since what date?
A. Since 1871 that I established my home here, but I have been here since the beginning, since 1868.
Q. Since 1868?
A. Yes, sailing as captain on a boat.
Q. Did you live here any earlier than 1868? Did you come here earlier than that?
A. No. That was the real beginning of Duluth, in 1868. I think I landed the first people here, in 1868, to make the beginning of railroad construction.
Q. The beginning of railroad construction?
A. Yes, sir; the fall of 1868.
Q. And that was the first time you came here yourself?
A. Yes, sir, that I was here, but I had been out on the lake before that, but off Superior; came in the Superior entry before that.
Q When were you first in Superior entry?
A. In 1863.
Q. And were you navigating the lakes at that time when you first came to Superior entry?
A. Yes, sir.
320 Q. In what capacity?
A. I was second mate of the steamer Iron City; I was for a while on the Iron City and for a while on the Ironside; one of those two steamers.
Q. Did you, between 1863 and 1868, sail up and down the lakes?
A Yes, sir.
Q. How old were you in 1863?
A. I was 18, March 17th.
Q. And were you coming to the head of the lakes frequently between 1863 and 1868?
A. Yes, sir. Well, no; between 1863 and 1868 seldom; probably once a year would be the most.

Q. Then, in 1868 you say that you brought the first people for the construction of a railroad?

A. Yes; I was then the mate of the steam Meteor.

Q. And what was that hauling at that time?

A. Sir?

Q. What was that hauling? Was it hauling supplies?

A. It was landing a party here; we landed them on the beach below where this big brewery is there today, in Duluth.

Q. Did that party have any relation to the construction of the Lake Superior & Mississippi?

A. Yes, sir. That was the beginning.

Q. This party was concerned with that construction?

A. Concerned with that survey and operation; yes, sir.

Q. And from then on did you have something to do with hauling materials for the road or bringing people up who were interested in it?

A. Yes, sir.

Q. Well, what? Just briefly.

A. To this port?

Q. Yes.

A. All classes of freight; cargoes going back again to Lake Erie ports.

321 Q. And in 1871 did you say it was you became a resident of the city?

A. I moved into my home here.

Q. And since that time, in a general way, what has been your business?

A. Up until 1881 I sailed on this lake and to this head of the lakes.

Q. And since then what?

A. I have been connected with buildings and operating vessels, stevedoring and frogging around the head of the lakes.

Q. Did you invent and build what were known as the whalebacks?

A. Yes, sir.

Q. And when was it that the first one was constructed?

A. In 1888.

Q. You built that?

A. Yes, sir.

Q. And built a considerable number after that?

A. Yes, sir.

Q. And you have been engaged in shipbuilding since that time?

A. Yes, sir.

Q. Ever since 1888 or possibly earlier?

A. Yes, sir.

Q. On these earliest days you have spoken of, were you familiar with the waters between what is known as Wisconsin and Minnesota points and Fond du Lac? Just state what your knowledge of those waters was in the early days.

A. In the early days we had no chart but what is known as the Bayfield chart. The Bayfield chart was, I think, from a survey along in the '30's, between '30 and '40 some time. The lake survey of

Lake Superior was not until about 1875; I think it began in '73, except I think the head of the lake here was surveyed earlier, I think known as the Meade chart, but the rest of Lake Superior was
322 surveyed in the years between 1873 and 1875, I think, and the first issue of their charts came out about that time or soon after.

Q. Do you remember about what time it was that you folks got the first of the Meade charts as relating to the head of the lakes?

A. I don't remember of seeing a Meade chart until after the lake survey charts at large were issued.

Q. That is, along in 1873 or '4 or '5?

A. About that time. The Bayfield chart we had.

Q. Now calling your attention to papers that have been marked Minnesota Exhibit 8 and Minnesota Exhibit 7, I will ask you if that is what you refer to as the Bayfield chart—those papers?

A. Not a very good print that.

Q. This is a photograph.

A. This is a photograph of the chart?

Q. Yes; a photograph of a photograph.

A. Yes; that is about right; that is about right. A most wonderful chart!

Q. What?

A. It was the most wonderful chart made in such a short time by a man on a sailing vessel.

Q. Was it understood to be accurate?

A. It was all we had to go by in those days, and it was practically accurate; yes, sir.

Q. Now where, Captain, did you in those early days understand the mouth of the St. Louis River to be?

A. It was away up the river some place, up around Spirit Lake. Spirit Lake is the head of this system of bays, or extension of the lake, rather.

Q. Up at Big Island, you mean?

A. Yes, above Big Island.

Q. Where the waters divide there and one branch goes south and the other north of Big Island?

323 A. Well, we only looked on to the one channel in those days as the channel on the south side of the island.

Q. Was that the course that navigation usually took—the south side of the island?

A. Yes, that is all that I know.

Q. Now calling your attention to a chart which has been marked Minnesota Exhibit 3, and to Grassy Point which you see here. (Indicating.)

A. Yes.

Q. I will ask you what the course of navigation was from just below Grassy Point upwards towards Fond du Lac, that is, the main navigated and navigable channel; what was it?

A. Let me have your pencil and I will show you what I knew to be the place, and what we did; down in through here and past in south of the island and into the river here. (Indicating.)

Q. The course you have marked is approximately along the line A-E-G-B-D, and then up the channel south of the island?

A. Yes, sir.

Q. Now, was there a navigable channed right next to Grassy Point here, on this curved right line which is marked H at one point?

A. Where do you mean?

Q. I say was there along there.

A. A channel?

Q. Yes.

A. Not that I know.

Q. What was the character of the water there?

A. The character of that whole bay was such that a man could wade on that pretty nearly from any place up on the river here, through that whole country. There were no boats here that drew more than three or four feet of water in those days.

324 Q. What is the fact with reference to the width of the waters from main shore to main shore at, say, a point just easterly of Big Island?

A. About a mile wide. I can see it on there and know what it is; from my knowledge of charts I can see it is about a mile wide, and I have had that impression.

Q. Spirit Lake, do you know about how large that is?

A. About a mile square, looking at it there, and I know it is that large.

Q. What do the waters of Spirit Lake consist of? Is it the backing up of the waters of the bay of St. Louis, or is it a part of the river?

A. It is part of the system or extension of Lake Superior into a form of bays, like many of the bays we have got in other lakes.

Q. Now, this light line that appears to be water here connecting Spirit Lake with the St. Louis River, do you know whether that was cut by men?

A. Yes, I remember when it was cut.

Q. Do you remember about when it was?

A. Somewhere along about 1885 or '6, something like that.

Q. Now, what is the fact, if you know, with reference to whether the bottom of these bays was shifting, changing from time to time, filling up?

A. They were more or less shifting; I know they were because I have seen this blocked up with timber down here, so you could not get through there with a sail boat.

Q. The point you are referring to is——

A. Between Big Island and the lower end of Spirit Lake.

Q. You have seen that blocked up with timber?

A. Yes, so that small boats could not get through. It was
325 all shallow water, the whole of that.

Q. Is that true to a greater or less extent in the waters just below that, down to Grassy Point?

A. I should think so. I have been in there duck shooting and frogging around there many times.

Q. Were these waters just above and just below Grassy Point commonly known in those days as upper and lower St. Louis Bay?

A. Yes, I think that was the term that it was known by in those days, and they are known as that now.

(A map bearing the heading "Birdseye View Superior, Wisconsin—The New Steel Center" was marked Minnesota Exhibit 17.)

Q. Calling your attention to a plat or chart which has been marked Minnesota Exhibit 17, and which I take it might be characterized as a view of these waters as seen by Wisconsin, I will ask you if that is a substantially correct representation of these waters in question from the Superior entry up to somewhat above the mouth of the St. Louis River, so far as form is concerned of the bays and the bodies of water.

A. It looks like a good picture of it. I never saw that before.

Q. You never saw that before this morning?

A. No.

Q. Suppose we just mark it on here. Would this point, at which my pen is now and which I will mark A, represent the lower end of Grassy Point?

A. Yes.

Q. And would this which I mark B fairly represent Big Island?

A. It is not the shape of it, but it is about where it is.

Q. The location of it?

A. Yes.

326 Q. And this which I mark C, would that represent Spirit Lake?

A. Yes, sir.

Q. And would this which I will mark D represent about where you say the mouth of the river is——

A. Yes, sir.

Q. — and was known?

A. Yes, sir.

Q. The waters which I will mark E, is that what is known as upper St. Louis Bay?

A. Yes, sir.

Q. And what I mark F as lower St. Louis Bay?

A. Yes, sir.

Q. And Superior Bay would be these waters which are marked Superior harbor on the map?

A. Yes.

Q. And what is called the Superior entry, is that the point which I will mark G?

A. Yes, as it is now. It used to shift around a little in the early days.

Q. That was a shifting——

A. The whole formation there; the old lighthouse is away from where the original channel was there.

Q. To what extent was there shifting out there?

A. I should think several hundred feet anyway.

Q. What do you mean by that? Several hundred feet where the opening was?

A. The erosion from the point.

Q. Just what do you mean by that? Was it several hundred feet wider at times than others.

A. Wider at times than at others. We would come to anchor there, and we would come in here and sound and be looking for that channel maybe a whole day before we would find it, to get in and out.

Q. Is it true that there was a very great difference in the
327 depth of the waters at that point from time to time, in a given place?

A. It would have a different course, and we used to have great floods in those days that would erode and tear out and send timber down. I have seen timber 50 miles below the mouth of this, the lake full of it, that came out of the river; even some of the islands in here, floating islands, pieces of them. I have met an island out of Duluth harbor, after this channel was cut, down the lake 10 or 15 miles.

Q. That is, you refer to this channel, the Duluth channel?

A. Yes.

Q. Suppose I mark that. The point I mark H, is what is known as the Duluth canal?

A. Yes, sir.

Q. And when was that cut, about?

A. 1871, I think. No, 1872 or '3.

Q. Well, I think there has been some evidence in here of about 1870. It is not specially important. It was cut along in the early '70's anyway, was it, as you remember?

A. It was opened in 1871, I think, first opened.

Q. I guess while we are about it we might as well have a few more marks on here. Does the projection of land which I will mark I represent Rice's Point?

A. Yes, sir.

Q. And just opposite that where I mark K, does that represent Connor's Point?

A. Yes, sir.

Q. What kind of formation is this Minnesota Point which is between the point I have marked H, the Duluth ship canal, and G the Superior entry? What is the formation?

328 A. I have seen another point outside of that; I have been on the hills here and saw, in the spring of the year, the ice leave and go away to the eastward for a number of days, and we thought navigation opened. A big northeaster would come and send the ice back, and the ice would ground outside of Minnesota Point and be aground there until away along in May, and the erosion of the ice by the waves and the action of the waves throwing the sand up onto the ice would be such that we would have another row, a point like Minnesota point, and I have often thought of it seriously, and I believe the formation of all the points to the head of the lakes have been of the same character. The Apostle Islands, the south

shore of the lake, is a sandstone formation, of a very soft character, the ice and waves disintegrating, the action of the waves carrying it westward, is one of these bars I have seen form outside of Minnesota Point and gives evidence of its forming all the different layers of bars up through the river, the clay mixing with the surrounding land on both the north and south side of the upper end of the lake, being of clay formation, and the sand wearing from the Apostles and the sandstone formation working up and forming with the clays have made all of these islands and flat portion of what was one day the west end of Lake Superior.

Q. Then, your idea is that these various little strips of land going out into the lake, like Minnesota Point, Rice's Point, Connor's Point, Grassy Point, and some of these farther up even, were simply deposits in the body of the lake by reason of these washings that you speak of?

329 A. The erosion from above and the washings of the sand by the action of the waves meeting them.

Q. And that there is also another point forming farther out in the lake beyond Minnesota Point?

A. The sandbars are what would under the same conditions form another point.

Mr. Bailey: I offer Minnesota Exhibit 17 in evidence.

Mr. Gard: Objected to as incompetent, immaterial and not the best evidence.

The Commissioner: Received.

Q. Do you know whether the waters of these bays, and extending clear up to Fond du Lac, are of substantially the same level as the waters of the main body of Lake Superior?

A. Yes, sir.

Q. Do you know anything about whether there are tides in these bays and how far up they extend?

A. I have given that great study, agitating a breakwater for protecting the entrance to the harbor. There is an enclosure I think of about 20 square miles of territory inside here.

Q. Inside Minnesota Point?

A. Yes, sir. There are two gaps through the point that are about 350 feet wide, an average of the two about 700 feet wide. Lake Superior is affected not by tides as known, but by fluctuations caused by wind pressure or barometer pressure to some extent. The water in the lake will rise outside in the lake, maybe a couple of feet in extreme cases, fluctuate like the water in a bathtub, as you see. This occurs in all our lakes. It occurs more in the west end of the lake than any other point that I know of, because of its peculiar formation, the finger-mark of the west end of the Great Lakes,

330 with a great, long 400 miles sweep. That fluctuation, with the water rising one, two or maybe three feet in the lake, which it may do in a few minutes or in one or two hours and will remain there for a little; then it will recede maybe at the same rate of speed, or faster. As this great body outside rises and lowers and this orifice of the two orifices let this water into the enclosure of 20

or more miles inside, it is affected in the same ratio that these orifices will admit either in-flow or out-flow from this enclosure inside. That extends up to about the point I referred to as the beginning of the river.

Q. You have just mentioned incidentally there that you have given considerable attention to the feasibility and desirability of constructing a breakwater outside of Minnesota Point, have you not?

A. Yes, sir.

Q. And you have made studies of the rise and fall of the lake in that connection?

A. Yes, sir.

Q. And you know that this rise and fall does occur from some reason anyway, whatever it is?

A. Well, we are almost certain of the reasons.

Q. Well, you know it does rise and fall?

A. Yes, sir.

Q. And extends up to the point you have stated?

A. Yes. I have known a current of water running through these entries of six or seven miles an hour in and six or seven miles an hour out.

Q. This area that you speak of, 20 or 22 miles—was it?

A. Well, it is over 20 miles.

Q. That refers to the area of the bays that you have described?

331 A. Yes, sir.

Q. That is Superior Bay, upper and lower St. Louis Bay?

A. Yes, sir.

Cross-examination.

By Mr. Gard:

Q. Captain McDougall, you say you first came in the Superior entry in 1863; is that right?

A. I think so; I think we got in there; I was on the lake, I know, at that time.

Q. You had been running on the lake as a captain, had you, then?

A. Not at that time; no, sir.

Q. But you had been running on a vessel, had you?

A. Yes, sir.

Q. What vessel had you been running on then?

A. Well, I was on different vessels before that; commenced as a deck hand on one and worked up to be second mate on this one of the finest steamers on the lake, in 1863.

Q. How often did that steamer visit the head of the lakes?

A. Now that I could not answer.

Q. Just approximately, Captain.

A. About once or twice a year, not more than that. Some years I think I did not come in, that we did not come as far as Superior.

Q. Was there very little navigation at the head of the lakes here prior to 1863, or not?

A. Well, very little.

Q. Very little?

A. Not up to Duluth, no. There was no Duluth then.

Q. When do you understand that navigation at the head of the lakes here began? That is, you may exclude the Indian canoe.

A. Oh, I should think vessels moved around up here,
332 small vessels, as early as 1850, possibly 1847, small sailing vessels.

Q. Was there any settlement here in 1847—white settlement?

A. I think not. I was not here then, but my recollection of the history of the country would indicate 1850 as an early beginning of white men here.

Q. The first white settlement then, you understand, was in the early '50's?

A. Yes, sir.

Q. At the head of the lakes?

A. Yes, sir.

Q. Do you know of any occasion for boats to come up here before that time?

A. The canal was finished in 1855 and——

Q. By the canal you mean what?

A. The Sault canal, the connection from the lower lakes. The only vessel here was one steamer, I think it was called the Independence, that was portaged across at the Sault, she was taken across the land at the Sault, and she ran a while on Lake Superior and I think made one or two trips, possibly a few trips to the head of the lakes, to Ontonagon and probably to where Superior is now.

Q. How early was that boat brought on to Lake Superior?

A. Oh, I think along about in 1850.

Q. And is that the first boat you knew or you think was on Lake Superior?

A. There were some small sailing vessels.

Q. That was a steamboat?

A. That was a steamboat.

Q. And was that the first steamboat that you think was on Lake Superior?

A. My recollection of it now is that it is; yes, sir.

Q. And that was about 1850, you think?

A. I think so; yes, sir.

333 Q. And do you know how much water that boat drew?

A. No, I should think not; but I should think 6 or 7 feet.

Q. Then you say the Sault canal was completed in 1855?

A. Yes, sir.

Q. What draught boats did that permit to come up in to Lake Superior?

A. About 7 or 8 feet. The full canal draught I think was 9 feet, but the fluctuation would reduce the depth.

Q. Now, you say you came to Superior or to the head of the lakes between 1863 and 1868 about once a year?

A. I think so; yes, sir; or possibly some years I did not come. I think some years I did not come, there was so little business here.

Q. Very little occasion to come here then, I suppose, with boats?
A. Very little, if any, business, yes.
Q. And you moved to Duluth, you say, in 1871?
A. Yes, sir.
Q. And have resided in Duluth since that time?
A. Yes, sir.
Q. Now to what extent, Captain McDougall, have you navigated the waters above Grassy Point?
A. I would think 100 times at least.
Q. And on what kind of a boat?
A. Generally with some small yacht, tug, or sail boat.
Q. What tug did you use?
A. I have had two of my own here, called the Riverside, I think it was, and another one the Highland; there is one of the boats in the harbor here now. But I have had more small boat trips than I have had——
Q. Your navigation, then, above Grassy Point was principally with light draught boats?
A. Yes, sir.

Q. How much water would they draw? What do you
334 mean by light draught boats?
A. Oh, 5 or 6 feet; not more than that.

Q. And you say you always used the Bayfield chart?
A. Well, I did not use the Bayfield chart much to go up the river with; used it on Lake Superior.
Q. You used that on Lake Superior?
A. Yes, sir.
Q. Did you use any chart going up the river?
A. I have made reference to the Bayfield chart in locating the soundings on it, to see the channel; at least I think so.
Q. You went by the Bayfield chart, did you, in navigating the waters of St. Louis Bay and the river?
A. Well, not necessarily altogether that; I would give reference to it. I used to hunt and fish around here, all we could get opportunity to. I imagine I knew that river about as well as anybody in those days.
Q. You say in your navigation of the waters about Grassy Point you always took what was known as the cut-off or the channel south of Big Island?
A. Yes, sir.
Q. Was that the channel that you invariably took in going up the river and coming back?
A. Yes, sir.
Q. Never was around north of Big Island in the boat?
A. I presume I have been around there duck shooting and trapping or something of that kind.
Q. That would be with a small row-boat or sail boat?
A. Yes, sir.
Q. That drew probably 12 inches of water, and not more?
A. Probably something like that.
Q. So you could go anywhere with that kind of a boat?

A. Yes, sir.

Q. And you did not have to hunt channels, did you, with that?

335 A. No, sir, not so much.

Q. Did you operate a scow propelled by steam up the river some there?

A. I have been interested in enterprises up the river that did use scows and small draught tugs to tow them.

Q. By small draught tugs, what draught would you say they would draw?

A. Oh, about five feet I should think, probably.

Q. And when was that?

A. Well, there was some experience there from 1882, '3, '4, '5, '6, '7, '8, '9, '10.

Q. What is the deepest draught vessel that you navigated the waters with above Grassy Point?

A. I should judge about five feet.

Q. And was that the tug?

A. The tug; yes, sir.

Q. And it was in the '80's, was it, or not?

A. I have been there in the '80's with such boats; yes, sir.

Q. Were you there before the '80's with such a boat?

A. No, sir.

Q. Have you navigated the river since it was dredged?

A. Yes, sir.

Q. And in navigating the river since it was dredged, did you take the dredged channel?

A. I think probably I did; anyway that would be on passenger boats.

Q. Since the channel was dredged, did you go southerly or northerly of Big Island?

A. I think I have gone both ways since it was dredged.

Q. But before it was dredged, your navigation was southerly of the island?

A. Yes, sir.

336 Q. That was the nearer channel up the river, wasn't it?

A. Yes, and the best channel.

Q. You considered it the best channel?

A. Yes, sir.

Q. Now, Captain, you do not understand that the rise and fall of the waters of Lake Superior are caused by what we consider tidal causes, regular tidal causes? By that I mean attraction of the sun and moon.

A. No, sir, I think it is not from that cause.

Q. You think it is from the pressure, the different barometer pressures and the wind?

A. Yes, sir.

Q. Now, have you ever taken any measurements to see how far those rises and falls, which we will call tides affected the waters of the river?

A. Yes, sir; very lately.

Q. How far did you find that they affected it?

A. We are putting in a new shipbuilding plant, I guess seven or eight miles from here. I know it affected it there the day before yesterday.

Q. Did you find out how far up it affected it above that?

A. No, sir.

Q. Your shipbuilding plant is opposite Big Island, isn't it?

A. Yes, sir.

Q. On the Duluth side?

A. Yes.

Q. About what place?

A. What was formerly known as Ironton.

Q. It is what direction from Big Island?

A. North.

Q. Is it north or northwesterly?

A. North or northwesterly.

Q. Rather northwesterly, probably, isn't it?

A. I guess so.

337 Q. I would think so. Now, you say you have not taken measurements above that place to see whether the tide affects——

A. No, but we know from getting scows grounded up there that if we wait for the shifting of the wind the scow will come off and come away.

Q. Do you know how far that extends up the river?

A. Up to about the point I speak of.

Q. You have been to Fond du Lac frequently?

A. Yes, within two or three years.

Q. Do you know whether that rising and falling affects the water up to Fond du Lac?

A. It may a little, in extreme cases; yes, sir.

Q. Well, you never made any measurements to determine whether it does or not, did you, Captain?

A. Well, we have a certain instinct in our system that teaches us things without making measurements.

Q. Yes; and you are testifying not from measurements, but just from your observations, I understand.

A. Yes.

Q. I am not questioning your observation, Captain; I just wanted to know how you were getting at it. You say there was a shifting of the sands between Wisconsin and Minnesota Points in the early days?

A. Yes, sir.

Q. That is what is called the natural entry?

A. Yes, sir.

Q. And how deep was the water there, generally speaking?

A. Sometimes it would be 20 feet, and then it would not be over 7, maybe, when we would come back again.

338 Q. Would you have to search for the channels considerable?

A. Yes, sir.

Q. And they were varying, as I understand?

A. Yes.

Q. Now you spoke of seeing the water run in the canals and out of the canals, depending on the rise and fall of the lake levels, at this end of the lake?

A. Yes, sir.

Q. The general trend of the water of course is out, isn't it, from these inner bays here, or rivers as you call them?

A. The river is shut off by a series of dams until there will be so very little water coming now; it is confined by their storages; the fluctuation is just the same as it was previous.

Q. Well, the water that comes down the St. Louis River has to get out in the lake, hasn't it?

A. Yes, sir.

Q. And it makes a current to some extent out in the lake, doesn't it?

A. In tremendous volume during a high flood.

Q. Yes.

A. During drought very little, a very small flow of water.

Q. The water of the St. Louis River is a different color from the water of the lake, isn't it?

A. Yes, sir.

Q. What color is the water of the St. Louis?

A. About the color of beer.

Q. With muskeg or tamarack——

Mr. Bailey: That all comes from the Wisconsin side just now.

Mr. Gard: You are speaking of recent history. Before the first of July it probably came from the other side.

Mr. Hanitch: The same color on the boat, I think.

339 Q. You could observe that current of colored water out of the natural entry there for some distance out in the lake, couldn't you, in the early days?

A. In the spring.

Q. In the spring especially?

A. Not in the summer.

Q. Not in the summer. How far out could you observe the current of colored water out in the lake?

A. Oh, sometimes a mile or more.

Q. And you say you have seen driftwood, a great deal of it, float out into the lake, into the inner waters here, through the natural entry?

A. Yes.

Q. And you spoke of floating islands. They floated out of the natural entry there, did they, in the early day-?

A. Yes, sir.

Q. And you say you saw one of those islands quite far out in the lake?

A. Yes, sir.

Q. How far out?

A. Oh, ten or fifteen miles—trees, large trees on them.

Q. Do you know where those islands came from, Captain?

A. They came out of Superior Bay or up the river some place; they came out of Superior Bay, that is where they came from.

Q. Did you ever trace their origin?

A. Yes, sir; I have often been aboard of them before they moved.

Q. Was not Grassy Point the source of most of those islands?

A. No, I think not, sir.

Q. Where would you say the source of them was?

A. Superior Bay.

340 Q. What part of Superior Bay?

A. Right off Duluth harbor, where it is filled with ships now.

Q. What is that?

A. In Duluth harbor, where it is full of ships now. It is where all our shipping is in Duluth harbor.

Q. Around the shore of the Duluth part of Superior bay, you mean?

A. Yes, sir.

Q. You say the Duluth canal was cut in 1871?

A. I think it was 1871; yes, sir.

Q. And there is a ship canal now from the point between Rice's and Connor's Points that extends up along near the Duluth shore or the Minnesota shore out through the Duluth canal; isn't there?

A. How is that, sir?

(The question was read by the reporter.)

Q. That is, I mean a channel which boats take in entering and leaving the harbor, out of the Duluth canal.

A. From what point?

Q. Between Rice's and Connor's Point.

A. Yes, sir.

Q. One channel going out through the Duluth entry and another one going down through the old natural entry?

A. Yes, sir.

Q. Do you know which one of them the most ships traverse?

A. No, I do not.

Q. Have you some idea?

A. I think there are more coming in and out of the Duluth channel than the other.

Q. And that is the artificial channel?

A. Yes, sir.

Q. How long has that channel been used?

A. Which channel?

341 Q. The channel on the Duluth side?

A. By tugs and small boats it has been used ever since they cut the hole in the dike. There was a dike across the harbor. That dike was built to keep the water from running out of the Duluth canal. Will a little brief history of that be objectionable?

The Commissioner: Give us the history.

Q. I think we would like to hear the history of that, Captain.

A. This poor city, in its beginning, scraped up money enough to enthuse and build and open that canal. Some of the people interested in Superior thought it would be better to stop us from going ahead, and they insisted that if we opened this canal that it would destroy the outlet by way of Superior and the waters of St. Louis River would run out through here and block them down there; and the people of Duluth raised money enough, poor and all as they were, to build a dike so as to keep the waters from going through the Duluth entry when the canal was completed. After it was done, the dike, complete, the only communication then between Superior and Duluth was around the lake. In stormy weather they could not make that trip. They had gone before Congress and compelled us to put in this dike, and when they found that it was a great inconvenience they went to Congress and made us pull down the dike, so they could go across the dike from Duluth to Superior in the harbor proper. They had a better pull with Congress than we had in those days, and they put us to great expense and great annoyance, and particularly in that. The channel then was dug through
342 from Superior to Duluth. It made no difference in the flow—in or out of the Superior entry; it was just the same as it was originally and is now and ever will be, caused by the rise and fall of Lake Superior, the current of the water up and down.

Q. Is it your understanding that Congress ordered that dike to be taken out?

A. I understand that that was the condition; yes, sir.

Q. Can you refer to any action of Congress to indicate that or ordering that dike to be taken out?

A. Well, I cannot now, but I am thoroughly impressed with the idea that that was so—they compelled us to put it there and they compelled us to take it down.

Q. As a matter of fact it was blasted out, wasn't it?

A. No, sir, not at first. First there was a cut in it.

Q. Are you a little partisan towards Duluth, Captain, in your feeling?

A. I have lived here and I have worked in Superior; I have been appointed chairman of the joint commission to go and get harbor appropriations, and with success. I have gone and argued before Congress for fair and equitable division of harbor appropriations and succeeded in getting a four-million-dollar appropriation for this joint harbor, equally and agreeably divided up.

Q. That was when you had some interests in Superior, was it?

A. I have large interests on the Wisconsin side now; I own more land in Wisconsin than I do in Minnesota.

343 Q. That is down in the country, is it not, Douglas County?

A. Yes.

Q. How?

A. Yes, sir.

Q. You do not own any land in Superior, do you?

A. Not a great deal, no.

Q. What?

A. No.

Q. Your land is down on the Brule River?

A. Yes, sir, I have got some there.

Q. That is the nearest land you have to Superior, isn't it?

A. Yes, that is the nearest to Superior.

Q. Now, Captain, you spoke of the formation of these points, and I want to see if I can get your thought. Is it your thought that the points—we will take Minnesota Point for the present—was formed by the washings that came down the river, being carried out until the outgoing water met the incoming tide from the lake and formed an eddy or stilled the water, so as to give it an opportunity to settle, and the sediment did settle at that particular place? Is that in general your idea?

A. Yes, sir.

Q. That is the idea I got.

A. When I first came to the head of the lakes I saw the sand dunes that we had on Connor's Point and also on Rice's Point; both of those points had sand dunes, I think, when I first came here.

Q. But your idea is that the out-tendency of the river water, the water from the river, at a certain point meets the incoming tendency of the water from the lake and neutralizes the currents, so that the sediment settles at that particular place; is that right?

344 A. To some extent that is.

Q. And those places have been at successive points, have they? for instance, Grassy Point and Connor's Point and Minnesota Point.

A. I think they have all been trying to meet each other at times in the past, all the way up.

Q. Which do you consider was formed first—Rice's Point or Minnesota Point?

A. First?

Q. Yes.

A. Oh, Rice's Point.

Q. Which do you consider was formed first—Grassy Point or Rice's Point?

A. Grassy Point or Rice's Point?

Q. Yes.

A. Grassy Point was formed first.

Q. Grassy Point. Is that the farthest point up the river that is formed in that way, you think?

A. No, I think it formed around Spirit Lake just the same.

Q. Any farther up that you observed the same kind of formation?

A. Possibly more bars farther up in an earlier day.

Q. That formation was all made before you knew anything about it?

A. Yes, sir.

Q. Is it practically the same now as it was when you came here?

A. Some slight changes.

Q. What changes do you refer to?

A. More of the sediment filling in the bays and moving it around. The clay formation comes down and is a long while settling.

Q. Now, Captain, did you ever hear of the place between Minnesota Point and Wisconsin Point as being called——

A. Sir?

Q. Did you ever hear the waters between Wisconsin Point
345 and Minnesota Point referred to as the mouth of the St. Louis River?

A. I did not get that.

Q. The waters between Wisconsin and Minnesota Points, referred to as the mouth of the St. Louis River?

A. I have heard of it as the entry.

Q. Have you heard it referred to as the mouth of the St. Louis River?

A. Oh, possibly I may have, but it is generally called the entry.

Q. Yes. You have seen maps, haven't you, that are marked the mouth of the St. Louis River?

A. Possibly I have. It is always known as the entry.

Q. Are you familiar with the channel, the original channel, after you come through the entry into the bay?

A. As it is now?

Q. No, the original.

A. Well, I have a fairly good idea of it; yes, sir.

Q. There was a channel up Superior Bay there, wasn't there?

A. There was a wide channel that was sometimes—well, I guess always was pretty wide and some points a little narrower than it was in other places. It was not a regular channel. It was a deeper part of the bay, that is all.

Q. Well, it extended all the way up to Rice's and Connor's Point, didn't it?

A. Yes, I think about nine or ten feet.

Q. I now show you Wisconsin Exhibit 1, which is the Meade chart.

A. Yes, sir.

Q. And I will ask you to observe this chart from the
346 natural entry up to the point between Connor's and Rice's Point, and see if you observe on that map a channel.

A. Yes, it indicates a channel there, but my recollection is that in the early days it was mighty hard to find. This chart was issued in 1861.

Q. The survey was made in 1861 Captain; around there.

A. Yes.

Q. But you have no reason to think that this chart is incorrect, have you?

A. No, but it was so little known in those days that I know we were glad to land there in place of trying to find our way——

Q. You say you were glad to land there? You mean near the Superior lighthouse?

A. Yes, right there.

Q. That is, at the lighthouse at the Superior entry?

A. Yes; we used to come in here once in a while.

Q. That is at the——

A. At the old Quebec wharf.

Q. That is at Old Superior. Q. Was it difficult to get over there?

A. Well, it was pretty hard to find the entrance there; in those days things were not buoyed as they are now.

Q. Did you sail up the St. Louis Bay considerable?

A. My earliest recollection was coming in here, and we could not find this; we got to Connor's Point; we landed here some place at Connor's Point.

Q. Now just a moment, Captain. I want to get this on the record. Your earliest recollection, you say you came in here. You mean the entry?

A. Yes, sir.

Q. And where did you go from the entry?

347 A. Well, possibly the first time it may have been to the Quebec wharf.

Q. Before the channel was dredged did you sail up the Superior Bay very much?

A. I might have some before there was any dredging there.

Q. You had to hunt for a channel, didn't you?

A. Yes, we had to grope around to find it.

Q. It was not marked then?

A. Well, our boats those days only drew about nine feet of water, and we could wander about here and find a channel; no land there.

Q. That is, you landed there at Connor's Point, you say?

A. Yes, I can remember being there. Now what the year was I don't know, but it was in a very early date anyway.

Q. But with your boat you could navigate most anywhere on the bay, could you?

A. Oh, no; no, sir, not at all.

Q. Well, you say you——

A. Sometimes we could not find the channel and we would probably unload over here on the point, right about there. (Indicating.)

Q. That is a point outside of Wisconsin Point, southeasterly of the entry?

A. Yes.

Q. How far southeasterly of the entry?

A. Oh, I should think probably a quarter of a mile south of there.

Q. And you landed there for the reason you could not get through the entry?

A. That we could not find the channel.

Q. Could not find the channel?

A. No.

Q. You searched for the channel there and was unable to find it?

A. Yes, sir.

348 Q. When was that?

A. Oh, some of those years, in the '60's; '64 or '65, something like that. We used to land our freight with yawl boats, and take on our freight with yawl boats. We would have very little—maybe a few barrels of pork and a couple of barrels of whisky, and we could always get that into small boats.

Q. You used the small boats for lightering?

A. Yes.

Mr. Hanitch: More whisky than pork, Captain?
Witness: There was some pork.

Q. Now, Captain McDougall, as I understood your evidence on direct examination, you stated that you did not know of a channel marked on this Meade map H.
A. That I did not know there was one?
Q. Yes.
A. No, I did not, honestly.
Q. I just want to get it on the record; I am not questioning that you did not know it, Captain. But you stated that you did not know of the channel marked H on this map?
A. No channel marked on that map now.
Q. Will you read the soundings through that?
A. That shows a deep hole in the bay, that is all.
Q. How long is it?
A. That is not a channel.
Q. Just wait, Captain. How long is it?

Mr. Bailey: Is what?
Mr. Gard: Is the hole that he spoke of.

A. That muskrat channel——
Q. Just answer the question. How long is it?
349 A. I don't see the channel there by looking at that chart.
Q. You don't see that channel marked H there, that is, that red ink, marked H?
A. I see that H plainly enough.
Q. But you do not see the channel there?
A. I do not; no, sir.
Q. And you don't know that there was any channel there?
A. I never knew there was.
Q. Do you have any reason to question the soundings that are on this map, that purport to have been the Meade soundings?
A. I have no question but that is correct, just as stated.
Q. Just as the map shows it?
A. Yes; I think probably it was that way.
Q. Now, Captain, in your navigating the St. Louis River, when you came through the opening between Grassy Point and the Wisconsin shore, what course did you take going up the river?
A. I would take from here and come around in about like that; right around that point there used to be lots of old snags there and we used them as the beacons to show where our entry into this channel was.
Q. Could you run most anywhere in that way with the boats you used?
A. Well, no, you could not run every place, but you could keep around here in five or six or seven feet of water, in here. ((Indicating.)

The Commissioner: You have got to call the points or places, Mr. Gard, so the record will show.

Q. When you came through Grassy Point, I wish you would mark with a lead pencil just about the way you traversed.

350 A. As nearly as I recall this is what we would do. (Indicating.)

Q. Now you have made a mark there with pencil that I will mark D. That is your mark now, is it?

A. That is as nearly as I can recollect it.

Q. You ran over seven feet of water then, didn't you?

A. I suppose that would be sufficient.

Mr. Fryberger: Don't you think it would be better to put a stronger mark of some kind on it than that? It is almost indistinct.

Mr. Gard: Well, I think that shows.

Mr. Fryberger: Have you any objection to red ink?

Mr. Gard: Oh, that is leading the witness. I don't want any red mark on there.

Q. What boats did you see navigating up the St. Louis River?

A. Sir?

Q. What boats did you observe navigating up the St. Louis River? Any of them when you were up above Grassy Point?

A. Small boats?

Q. Yes, or any boats.

The Commissioner: You ought to make that some time, Mr. Gard.

Q. Well, prior to 1880.

A. Sir?

Q. Prior to 1880, what boats did you observe navigating?

A. None.

Q. You did not observe any?

A. No, prior to 1880. Just a moment. Unless it be small boats, skiffs.

Q. Just skiffs and canoes and sail boats, probably?

A. Yes.

351 Q. Then, you don't know of any boats navigating up there before 1880—of your own knowledge I am speaking—aside from these small boats you have mentioned?

A. No, I do not.

Q. After 1880, between 1880 and 1890, what boats did you observe navigating above Grassy Point? Now I mean from your own knowledge.

A. Yes. Oh, I should say there have been two or three or possibly four small tugs. There was some rafting of cordwood up in that country. The tug that would be used in that I think would be of five or six feet draught. Possibly four or five boats all told, small tow boats, would have been working up in the bay between 1880 and——

Q. I beg your pardon; between 1880 and 1890?

A. Between 1880 and 1890.

Q. I asked you between 1870 and 1880 before.

A. Two boats I had; one of them would draw about three or four feet, and the other one about five feet.

Q. You say you think you have been up there about one hundred times?

A. Well, a hundred times is a great many times. I have certainly been up there fifty times.

Q. And most of them was in very light draught boats?

A. Yes, sir.

Q. Were you guided somewhat in your navigation of the waters up there by the rushes?

A. Very often; yes, sir.

Q. The rushes afforded you a pretty good guide, didn't they?

A. Yes, sir.

Q. That is, the rushes will come up on the shallow water, won't they?

352 A. That is right.

Q. And you avoid the rush beds?

A. Yes, sir.

Q. Aside from the rush beds, you could navigate with the boats you used most any part of the water above Grassy Point and Big Island and outside of Pokegama Bay, couldn't you?

A. No, it would be better to know the channel and know where that channel was up south of the island. I always supposed there was no channel on the other side.

Q. How long or until what date were you under the impression that there was no channel on the north side of Big Island?

A. I think until the government went in and dug out the channel there.

Q. That was along about 1889 and 1890?

A. Yes, I should think the first opening was made about that.

Q. Captain, you spoke about the Bayfield chart being remarkably accurate for the way it was made. Do you know how it was made?

A. Sir?

Q. Do you know how the Bayfield chart was made?

A. As I know it, it was made by soundings and the work of a Lieutenant Bayfield on board of a sailing ship, with small boats to get the detail reckonings. The work lasted, I think, for two or three years.

Q. You did not know personally of their work, did you?

A. No. That was done long before I was born.

Q. How did you get this information, Captain?

353 A. Well, I have got it through conversation with men who have probably read up on the history pertaining to this survey. It has been looked upon as one of the most wonderful works for the time that was spent on it and the apparatus to accomplish it.

Q. Captain Bayfield was a British——

A. A British officer.

Q. A British officer?

A. Yes, sir.

Q. I only ask you for information: Do you know how he came to chart the waters of this harbor here?

A. I think it was before the division of the boundary line between Canada and the United States was established, known as the Northwest Angle.

Q. I had that impression, but I didn't know whether it was correct or not. Probably thought he was charting British waters then.

A. British waters.

Q. It was made in the '20's, I guess; wasn't it?

A. I think it was in the '30's.

Mr. Fryberger: What chart is that?

Witness: The Bayfield chart.

Mr. Bailey: It shows on here '23 and '25 when it was made.

Witness: Oh, yes.

Q. Do you know how long Captain Bayfield was here at the head of the lakes?

A. No, sir.

Q. You never heard any testimony here on that?

A. No, sir.

Q. But you did hear that he made it in a remarkably short time, as I understand it?

A. Yes, I always understood that from data that I had received at times. It being the only chart we had in those days, we used to study it a great deal and hear a good deal of it, in fact they
354 were hard to get. A man that had a Bayfield chart was well off in navigation in those days.

Q. You studied it for the navigation of the lake?

A. Yes.

Q. On that map it is marked "Track Survey". Do you know what that means?

A. Deeper track?

Q. No, it is marked "Track Survey". Do you know what that "Track Survey" means? (Placing map before the witness.) I am showing you Minnesota Exhibit 7, and refer you to the words "Track Survey of the River St. Louis by M. Phillip, Ed Collins, M. D., under the direction of Lieutenant W. H. Bayfield, R. N." Now do you know what that "Track Survey" indicates?

A. I should infer that it would mean where it was personal to his knowledge, that he had been on the track and saw it; that he had done it personally. I should imagine that. A man that makes the track——

Q. Now you see that he gave soundings of just one line up the bays and river here?

A. Yes, sir.

Q. Do you think it could mean that he just surveyed one track?

A. I think he got much of his information from the natives that were here and took their view of the channel in that bay.

Q. You do not think that he got those soundings from the natives, do you?

A. No, I think he made those personally.

Q. And you see there is just one line of soundings, don't you?
A. Yes.
Q. He does not sound clear across—that is, the soundings do not show clear across the bay, do they?
A. No.
Q. Just one line up the bays and the river?
A. Yes.

Q. Now do you think that that Track Survey does not
355 refer to just that as a track?

A. No, it is quite visible that it was a track there.
Q. What I am getting at is, do you consider that that track there refers to that as a track, or do you consider that it refers to the fact that he made it himself personally on the track?
A. Well, I should infer that that is what was meant.
Q. The latter; that is, that he was on the track personally?
A. Yes.
Q. You don't know, I suppose; only just your guess, is it?
A. It is such a chart as I would make if I made that trip.
Q. Yes; but you don't know what the word "Track" really means, do you?
A. I do not; no, sir.

Re-direct examination.

By Mr. Bailey:

Q. Referring further to this Minnesota Exhibit 7, I will ask you if this line of soundings from Grassy Point up, at any rate, appearing on the exhibit, and up through beyond Spirit Lake, is substantially identical with the line of traffic as it passed up and down in the early days?
A. You mean prior to the digging by the government on the other side?
Q. Yes, and from the earliest days that you know anything about it, up until the channel was dug out by the government.
A. Yes, sir.
Q. And that was the main navigated and navigable channel?
A. So far as I know; yes, sir.

Q. Captain, do you know anything about as to whether in
356 the early days, at any time or times, the waters of the lake passed practically across Minnesota Point?

A. In severe storms it did breach through, yes.
Q. The whole of Minnesota Point is, as a matter of fact, very low; that is, only a few feet above the level of the lake, is it not?
A. Yes, sir, but——
Q. Except where there are sand dunes, or something of that sort?
A. In the south end of the point it has broached through there at times, that I know of.
Q. How about up here just below the Duluth ship canal? Is there any time when the storm carries the waters of the lake clear across there?

A. Not that I know of.

Q. Would they go substantially across, do you know?

A. Sir?

Q. Would they go almost across, do you know, at any time?

A. Well, in high water and big waves they have washed up on top of it.

Q. You spoke about being interested in shipbuilding up at the Ironton plant. Is there anything in that that affects you financially either way so far as this case is concerned?

A. Not at all. The little property we have is Torrens'd, and we have no interest in this whatever. I do not know who the people are that are working on this case; I do not know the meaning of it.

Examined by the Commissioner:

Q. Is the Minnesota Point in substantially the same condition that it was when you first came up here?

A. Except the end, except the gap that was cut into it for the Duluth entry, and the erosion of the lower end of Minnesota Point.

357 Q. Do you know where the old lighthouse stands at the south end of the point?

A. Yes.

Q. What is the fact as to whether that was built at the end of the point at the time it was put up?

A. My recollection of it is it was exactly at the end, that we used to pass very close to it.

Q. Then, the entry was very much wider then than it is now through the piers there?

A. Yes, it was wide.

Q. About how wide was it, do you know, between the Wisconsin Point and the end of the Minnesota Point at that time. Oh, approximately, as near as you can tell.

A. I should judge sometimes it might have been a quarter of a mile wide there.

Q. Was there a well-defined channel through there, or was that a shifting channel?

A. A shifting channel; yes, sir.

Q. Do you remember when what we call the old piers were built, the first piers?

A. I remember about that time.

Q. About when were they built?

A. I cannot be positive. They were on one side only. I think there was pier room on one side only.

Q. On which side?

A. That would be the south side.

Q. Near the Wisconsin point?

A. Yes.

Q. Was that built close up to the Wisconsin Point or out some distance from it? What is the fact?

A. Well, I cannot place that in my mind. I was second mate and

mate afterwards of boats coming this way, and it was my duty to jump into the yawl boat to find and sound the channel, I know that—and I was good at it too.

358 Q. That was before the pier was built?

A. Yes.

Q. Did the building of the pier have any effect on the settling of it, do you know, or did it wander after that until the second pier was built?

A. I could not give clear information on that.

Q. Now, what is the fact as to whether there was timber growing on the Minnesota point from, say, about where the old lighthouse is built, up to the Duluth canal, at the time you first came up here?

A. Well, I should imagine—I think there was; the timber came pretty close to the lighthouse.

Q. Is that timber still standing there?

A. No. I think there are a few trees in there yet, not far from the lighthouse.

Q. Well, there is considerable timber stretched all along clear up as far as the Narrows, up there on the Minnesota Point?

A. Yes, sir.

Q. Has that materially changed since that time, or not?

A. Oh, it is being reduced all the time by cutting and men firing and destroying stuff more or less.

Q. Now, have you noticed whether or not the Minnesota Point is becoming wider down at the south end, in later years?

A. No, I could not say much on that. I would think there is very little change, only where the erosion may be from one or two of the big storms of some twenty years ago.

Q. Do you remember what year the lighthouse was built? I mean the old lighthouse.

A. No, I do not.

Q. Let me refresh your recollection a little bit.

A. No, I could not remember.

359 Q. Do you know whether it was built before the Civil War?

A. I think it was Oh, yes, it was built before the Civil War, or about the time of the Civil War.

Q. That is still standing just as it was when it was built?

A. Well, there is a part of the foundation standing there.

Q. It is still conspicuous?

A. I believe so: I have not been over there very recently.

Examined by Mr. Bailey:

Q. Do you know, Captain, the place called "The Barrens" down there on Minnesota Point?

A. The what?

Q. The Barrens, down there on Minnesota Point. Do you know that place?

A. No.

Q. Do you know whether there is a place down there where they have to build cribbing to keep the waters from washing across?

A. That is where the Government did the riprapping to protect it?

Q. Yes, I presume so.

A. Yes, the Government has done a lot of protection down there or it would have been eroded through long ago.

Q. Where was that—about the center of the point?

A. I think it is about two-thirds the length of the point, southerly.

Q. Two-thirds the distance as you start from Minnesota?

A. Yes, I think so.

Q. And you say that would have been washed through there long ago if it had not been for doing that?

A. Well, I was afraid it would have happened.

360 Q. Did the waters wash across there in case of storms?

A. I think it did; yes, sir.

Examined by the Commissioner:

Q. There is one other question I wanted to ask you, Captain,—whether there is a periodical rising and lowering of the water in Lake Superior every two or three years or so, any uniform movement up and down.

A. That is not very great, I think not much more than twelve or eighteen inches. That is regulated by the rainfall of the Lake Superior basin, regulated by the greatness of that, and the erosion through the gap at the outlet; that has been pilfered with by the water power companies on both sides. They have rights from both governments to use the water of the lake as a reservoir, and in damming the river by coffer dams and other obstructions since these improvements—that and railway abutments have affected the lake considerably. Last year we had a foot and a half or a foot to a foot and a half rise caused by some of their actions, and after their attention was called to it, to the fact they were doing this great damage by destroying property here, they have got it now under better regulation and is governed by an international commission, to govern the levels of Lake Superior in the future.

Q. You think that is controlled by artificial causes rather than natural causes?

A. The changes that come now are caused—the changes of fluctuation are caused from natural causes, but these other causes of rise in the water last year and the year before, and to some extent this year, are from artificial causes.

361 By Mr. Gard:

Q. That artificial cause just began, then, two years ago, as I understand it?

A. Well, it began twenty years ago, more or less; it has been affected as these improvements went on. Winter ice would accumulate around these improvements and choke the water, and its outflow was not as great as the original orifice or outflow.

Q. Is it or is it not true, Captain, that it is the intention to control artificially the height of the water in the lake from now on?
A. Yes, sir.

Mr. Gard: That is all.

(A recess was here taken until two o'clock P. M.)

362 FRANK A. BREWER was called as a witness by the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Brewer, you are a resident of the City of Duluth?
A. Yes, sir.
Q. And have been for how long?
A. Since 1880.
Q. You were a member of the Duncan & Brewer Lumber Company?
A. Yes, sir.
Q. How old were you when you came to Duluth, Mr. Brewer?
A. I was born in 1854; I would be 36.
Q. You are at the present time president of the Board of Education of the City of Duluth, are you?
A. Yes, sir.
Q. And have been for how long?
A. Two years.
Q. You are also president of the Duluth Crushed Stone Company, are you?
A. Yes, sir.
Q. When you first came to Duluth what was your business?
A. Lumber business, manufacturing and logging.
Q. Where was your mill located?
A. In the first ten years we were here we were sawing at R. A. Gray's mill and for a couple years at what was known as the Peck mill. They were both built to manufacture lumber for our firm or our company.
Q. What I mean is, about where were you located?
A. On Rice's Point.
Q. On Rice's Point?

A. On Rice's Point. Afterwards we built them out in
363 the bay, in 1890, at the foot of Thirty-ninth Avenue West.

Q. That is in Oneota, isn't it?
A. Yes, sir.
Q. Now, in the '80's right after you came here, did you get all or part of your logs down the St. Louis River and through the bays to your mills?
A. Yes, sir.
Q. Did you have any other traffic up and down these waters, the upper and lower St. Louis bay and the St. Louis River?

A. Not that I remember of.

Q. Well, did you have any tugs or boats?

A. We employed tugs for doing the work, for the towing of logs.

Q. Did you yourself have to do with the navigation of these waters?

A. I do not just understand that question.

Q. Well, I mean were you yourself operating a boat?

A. No, sir.

Q. But you were familiar with the navigation of the waters?

A. Yes, sir.

Q. And the course which navigation took through these waters?

A. Yes, sir.

Q. And had your logs towed down the waters by these tugs?

A. Yes, sir.

Q. Now, what in the early days of your recollection, and from then on down, has been known as the mouth of the St. Louis River? What do you understand it to be, what point?

A. Well, I understood the mouth of the St. Louis River would end about where what is known as the upper St. Louis Bay started.

364 Q. That is, just about where the waters divide there above Big Island?

A. Yes, sir.

Q. And have you during all of this time—I will ask you whether or not you have —known the waters between Rice's Point and the upper end of Big Island as upper and lower St. Louis Bay?

A. Yes, sir.

Q. What do you consider these waters—an arm of the lake, or bay, or river, or what?

Mr. Hudson: That is objected to as leading.

Mr. Bailey: They are an arm of the lake, bay, river, or what? is that leading?

Mr. Hudson: Well, I thought you were going to say arm of the lake, and stop.

Mr. Bailey: Counsel suggested a good place to stop, but then I didn't do it.

A. I would consider it more a part of the lake than I would a part of the river.

Q. Calling your attention to Minnesota Exhibit 3, will you tell us what the navigable and navigated main channel was from Rice's Point going up towards Fond du Lac, in the days of your earliest recollection, and before the government channel was dredged out?

A. The course that was usually followed by boats from about south of Grassy Point; there were two channels there that they usually followed; they usually followed this channel here, or very close to that; that was the one that was more in common use.

365 Q. The one you have pointed to is substantially the red line marked A-E-G-B-D, is it?

A. Yes, sir.

Q. And then on up southerly of Big Island?

A. Southerly of Big Island.

Q. And what was the other channel that you say was sometimes followed?

A. What we knew as the north channel was from this letter B and C through very close to this channel here.

Q. That is, you mean, on the red line from B to C?

A. Very close to that red line as nearly as I can remember it.

Q. And then on up north of Big Island?

A. Yes, sir.

Q. Now would the course used twist around in here just westerly of Grassy Point on a line marked H, except when people were going to Milford or to some point on that line?

A. I never saw it used.

Q. You never saw it used?

A. No, sir.

Q. Do you know whether there was a shoal place or bar at the westerly end of that light-colored line marked H, shallow water?

A. I know that we had logs frequently in this upper bay here and the lower bay, right in there (indicating); we had logs in those two bays there.

Q. The one that you are referring to is the bay marked "City Slip—Est. 1909," and the one just westerly of that and the one just easterly of that first?

A. Yes, sir. And I know that in getting logs out of these bays we came out and used this same channel coming down through here. (Indicating).

Q. That is, you refer to the channel marked C-B-G-E-A?

A. Yes, sir.

366 Q. Do you know, Mr. Brewer, whether the bottom in this so-called upper St. Louis Bay was changing from time to time, so far as soundings were concerned?

A. From the experience I had I know that it changed; we used to find that it changed up here around Spirit Lake entrance, up in here.

Q. That is, where Spirit Lake comes close to Big Island?

A. Yes, sir, comes close to Big Island.

Q. Did it change to a very appreciable extent at that point?

A. It changed enough so you would notice it, and we had to make new soundings there in doing work there.

Q. In your opinion was the bottom changed farther down in upper St. Louis Bay, only to a less marked extent?

A. I never discovered it changing as much as it did in there, because I had more work to do in that vicinity.

Mr. Fryberger: "In there"—to what do you refer?

Witness: In around by what would be the Spirit Lake dock and just below there, down towards Ironton.

Q. Do you know about there being tides in these waters?

A. I know there used to be a rise and fall of the water.

Q. Periodically, was it?

A. Why, I never discovered there was anything regular to it, but it was quite a tide there.

Q. Would logs left in there flow both ways, according to the rise and fall of the water?

A. Yes, sir. And of course the wind had a good deal to do with the rise and fall of the water—the northwest wind.

Q. Have you some maps with you, Mr. Brewer?

367 A. I have a map and a chart book that I used to use a good deal.

Q. St. Louis County map?

A. There is a St. Louis County map that I brought here.

Q. Where is that?

A. I gave it to you yesterday.

(A map was marked Minnesota Exhibit 18.)

Q. Showing you a map which the reporter has marked Minnesota Exhibit 18, I will ask you if that is a map which has been in your possession for some time.

A. Yes, sir.

Q. Now I see that there is a splice in this at township 60, and the top part of it has marked on it "New Addition 1902." Do you know how long you have had that top part?

A. Since 1902.

Q. Now, about the bottom part, that is, the part below this township 60, do you know how long you have had that?

A. I have had that quite a number of years, and as the later township was surveyed that was cut in, cut off, and that was added on in 1902. The lower part was in use a number of years before that in our office.

Q. Have you any idea how long before 1902?

A. I should think at least ten years.

Q. This has marked on it Duluth and Lake Superior, and the line running through there indicating the state boundary. You see that, do you?

A. Yes, sir.

Q. Was this map, the lower part of it, in common use around the head of the lakes as relating to the territory which it covers?

A. Yes, sir.

Q. Well recognized map, was it?

A. Yes, sir.

Q. And in common use?

368 A. Yes, sir.

Mr. Bailey: I offer Minnesota Exhibit 18 in evidence.

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

The Commissioner: Mr. Bailey, that is a very bulky exhibit. Is there any value in the upper half of that map?

Mr. Bailey: Nothing except it shows the date the upper half was published.

The Commissioner: I would suggest that you stipulate that

fact, and cut the map in two. It might be of some value to Mr. Brewer, and probably there would be no objection.

Mr. Bailey: He can get more of them.

The Commissioner: It is very bulky, that is all.

Mr. Bailey: Oh, I think in view of the circumstances we will let it stand as it is.

The Commissioner: All right.

Mr. Bailey: I do not see how we can chop it up very well. I think we had better let it go as it is.

Q. Do you know whether the line marked on this map as indicating the state boundary was in the early days, and down to the present time, so far as you know, the recognized state boundary at the head of the lakes?

A. So far as I know, it was.

Q. And was that generally accepted by the people?

A. To the best of my knowledge it was.

Mr. Bailey: Here are some township plats that I want to put in. I cannot qualify them specially by this witness, but they are exhibits, blue-prints, that were taken from the other
369 case.

Mr. Hudson: Let me see them.

Attorney-General Owen: They are objected to on the ground that they are incompetent, irrelevant and immaterial, but not on the ground that they are copies of the originals. (Three other blue-prints were marked Minnesota Exhibit 19, Minnesota Exhibit 20, and Minnesota Exhibit 21, respectively.)

Mr. Bailey: I will offer in evidence Minnesota Exhibits 19, 20 and 21, exhibits 19 and 21 being the government plats of township 49-15, and Exhibit 20 being government plat of township 49-14.

The Commissioner: Are those government plats, or copies of them?

Mr. Bailey: Well, these gentlemen are not going to raise any question on their being secondary evidence.

The Commissioner: I did not undstand that.

Mr. Bailey: I put them in purposely that way.

Attorney-General Owen: We object to them on the ground that they are incompetent, irrelevant and immaterial, but not on the ground that they are not originals or true copies of originals.

The Commissioner: The exhibits may be received.

(A large map was marked Minnesota Exhibit 22.)

Q. Showing you paper marked Minnesota Exhibit 22, I will ask you if that is the map which has been for some years in your possession, in use in your office?

A. Yes, sir.

Q. And is that a map which was in common circulation
370 throughout the State of Minnesota since its publication?

A. Yes, sir,

Mr. Bailey: I will offer in evidence Minnesota Exhibit 22, being a railroad map of the state.

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

The Commissioner: The exhibit is received, subject to the objection.

Q. Mr. Brewer, during the days when you were getting logs down the river, did you have some experience with logs floating back up the river?

A. Yes, sir.

Q. Just state what that was.

A. Many times we have had our booms broken open, and sometimes we thought they were open maliciously, and from the opening of those booms we had logs scattered all over the two bays, had them scattered in Superior Bay sometimes, and had them scattered up in what was known as the upper St. Louis, and also St. Louis Bay, and found logs with our lake marks on as far as Spirit Lake and up in the Pokegama.

Q. You say your lake marks on. What do you mean by that?

A. In logging we have different marks for different camps, where they were put in, and we would not use the same mark in the interior here that we would use on the lake—the mark stamped on the end of the logs.

Q. You mean by your lake marks, logs that had been cut in camps further down the lake, east from Minnesota Point?

A. They had been brought to our mill and the boom
371 opened and we would find those marks up in the upper bay.

Q. Clear up to——

A. We found them as far as Spirit Lake.

Q. Did you ever find any up as far as Fond du Lac, that you remember?

A. Not of lake marks.

Q. Did you have any trouble up there near Fond du Lac in your booms in reference to logs floating up the river and have to bring in booms to protect them at any time?

A. The Duluth Boom Company did.

Q. Well, all right. Were you connected with that company?

A. No, sir.

Q. Well, you heard about it?

A. Yes, sir.

Q. Just state what you knew about it.

A. Mr. Duncan, the senior member of our firm, was the president of the Duluth Boom Company, and they had a rafting ground and booms just below the two islands where the channel divides, just below Fond du Lac, and they had a holding ground there about a mile in length, and that was to catch logs coming down the St. Louis River, and they were separated there, the different owners' marks were separated, at the lower end, and then towed to Duluth, and at times when that boom had filled they had to make a rule there to put a crossboom on the upper end of the logs to

keep those logs from getting back up the river and coming down an open channel that was left for navigation for boats.

Q. Float back up the river?

A. Float back up the river when the water was at a normal stage.

Mr. Bailey: That is all.

Cross-examination.

By Mr. Gard:

372 Q. Mr. Brewer, how long did you say you had resided in Duluth?

A. Came here in 1880—37 years.

Q. And operated a sawmill on Rice's Point?

A. On Rice's Point and 39th Avenue West.

Q. When did you operate it at 39th Avenue West?

A. We built the mill in 1890.

Q. Then for ten years had you operated on Rice's Point?

A. Yes, sir.

Q. Between 1881 and 1890?

A. Yes, sir.

Q. What part of Rice's Point?

A. The larger part of the time was at the end of the point. Mr. Peck sawed for us two years.

Q. To what extent did you operate boats up the river?

A. To the extent of hiring them for doing our work.

Q. Do I understand—to what extent did you run on boats up the river?

A. Looking after getting of the logs to the mill. My end of the business was looking after the logging and getting logs to the mill.

Q. How often did you go up the river on boats?

A. Very frequently.

Q. What boat did you go up on?

A. Many different ones.

Q. What different ones?

A. I couldn't tell the names of them. I can tell some of them.

Q. What ones do you remember?

A. I remember the Agate and the Barrett. The Barrett was among the later ones, and the Carroll, I think, was one, the Spirit, the Nelly Cotton, and there was others I can't remember.

373 Q. How much water did they draw?

A. As I remember, from five to seven feet, seven and a half, possibly.

Q. Did you usually navigate the cut-off channel around Big Island or the northerly channel?

A. For small rafts we navigated around the island; larger rafts came down on the north side of the island.

Q. Your business that you went up on, was towing rafts?

A. Yes, sir, or towing boom sticks.

Q. Towing boom sticks and getting logs?

A. Yes, sir.

Q. In towing these boom sticks they extend back quite a distance behind the tow boat, don't they?

A. Yes, sir.

Q. You have to have something like a straight channel, or need a straight channel, or straight course to tow these boom sticks, don't you?

A. Not so much so as we do with the raft.

Q. More so with the raft, but if you get in a crooked channel the boom sticks will hug the shore and catch on the shore, won't they?

A. Oh, they will follow the tug very nicely. Of course, making a direct turn, why, you have got to be careful.

Q. You say you considered the mouth of the St. Louis River at what place, Mr. Brewer?

A. Above Big Island, about the Big Island.

Q. Is there any channel below that point?

A. Any channel?

Q. Yes, any channel below that point?

A. There was a channel that was in general use.

Q. Was there any deep channel, any river channel below that point, anything that you considered a river channel?

A. No sir.

Q. Nothing that you considered a river channel?

374 A. No, sir.

Q. Was there a deep place continuous or almost continuous down to Rice's Point?

A. Not to my knowledge.

Q. You didn't know of the deep channel between what you considered the mouth of St. Louis River down to Grassy Point?

A. I know of deep holes; I don't know of any channel.

Q. Are you acquainted with the Meade map?

A. Not by that name.

Q. Did you ever see a map, an early map with soundings on it?

A. Yes, I remember seeing one or two tugs that had maps with soundings on them.

Q. Do you remember whether you ever examined any of these maps to see if there is a channel indicated on these maps?

A. I have looked to see whether there was any continuous channel. I never found any.

Q. You didn't know of any channel, then, below the point that you considered the mouth of the St. Louis River?

A. Not any but the one that was commonly followed by tugs, going up and down the river.

Q. You state there was more than one channel that was followed?

A. Yes, sir.

Q. Was there more than one channel then?

A. There was one—there was a channel or sort of a channel they followed on the south side of the island and channel that was commonly followed on the north side.

Q. You place *of* the mouth of the river, don't you, back at the upper end of the island?

A. Just above where they divide these two channels, what you call channels.

375 Q. You don't consider, then, that there was any river channel below that, do you?

A. The one that they followed has always had an even depth.

Q. Did you consider that there were any river channels below the point at the head of Big Island, that you considered the mouth of the river?

A. There was places that was deeper than others and they followed a certain route down through there.

Q. I wish you would answer the question, whether you considered that there were river channels or a channel, river channel, below that point?

A. There was a channel that was followed, commonly followed.

Q. Did you consider it a river channel?

A. I considered it a bay channel.

Q. You considered it a bay channel; that's what you considered it?

A. Yes, sir.

Q. It was well-defined, was it?

A. None too well.

Q. Were you familiar with the waters of Superior Bay?

A. Yes, sir.

Q. Did you know of any channel in the water, that water, before there was any dredging done?

A. Yes, sir, one that was followed by the boats usually.

Q. Was that a well-defined channel?

A. Fairly well.

Q. Did you consider that a river channel?

A. No, sir, bay c nnel.

Q. You considered that a bay channel?

A. Yes, sir.

376 Q. Do you consider a channel one of the features of a bay?

A. Yes, sir.

Q. That is one of the features that characterizes a bay according to your idea?

A. They are channels the same as they are in the river.

Q. Why was it that you considered that the St. Louis River ended at the head of Big Island?

A. For the reason that here was no real current and the big lakes made up of different openings there, made up a sort of a bay and there was really no current that was regular when the water was at the normal stage. When the water was at extreme high stage there was quite a little current at times.

Q. Current through Grassy Point, wasn't there?

A. Only in extreme high water.

Q. No current at all at other times?

A. Not noticeable.

Q. There was a current through the natural entry out here, wasn't there?

A. As they came in and out, only as the rise by the winds, a sort of a tide that the water would back up and go——

Q. You never noticed any other current?

A. Not a continuous, regular current.

Q. Was there any general trend of the current?

A. I suppose the trend was a little more out than in.

Q. What color were the waters of the St. Louis Bay and River?

A. Sort of what is known as tamarack color, tamarack water.

Q. Have you noticed that tamarack-colored water extending in a continuous channel out into the lake some distance?

A. Yes.

Q. How far?

A. Oh, half a mile or a mile. That is only in times of
377 high water.

Q. That would be in the spring of the year usually?

A. Highest water here is usually in June and the first of July. I have seen very high water in September.

Q. There is considerable dead water above the head of Big Island, isn't there, along the side of the St. Louis River?

A. Yes, there are some sloughs up there and some islands that separate the river.

Q. What do you consider Spirit Lake is, part of the waters of the St. Louis River or not?

A. I should say it was part of the water of St. Louis Bay.

Q. Well, you place the mouth of the St. Louis River at the head of Big Island, don't you?

A. About there.

Q. These waters are above that, are they not?

Mr. Bailey: What waters are above what?

Q. Spirit Lake.

Mr. Bailey: Above what?

Q. Above the head waters of the St. Louis River.

A. There is water up there.

Q. Above the place that you designate as the mouth of St. Louis River. Isn't Spirit Lake above that?

A. It is just about on a line with it.

Q. What do you say about Little Pokegama?

A. Little Pokegama is below that. That's a larger part of where it comes in.

Q. Below what?

A. Below that (indicating); below the point that I designated above Big Island.

Q. What do you call Little Pokegama then?

378 A. Little Pokegama and Big Pokegama—Big Pokegama comes out below there.

Q. Where does Little Pokegama come out?

A. Little above that.

Q. What do you call that? Do you call those waters a part of the St. Louis River or not?

A. I should think that would be as much of the lake almost, or the bay, part of the bay, as these waters below.

Q. According to your theory it would be a part of a lake, wouldn't it?

A. I know the lake water flows back there.

Q. According to your theory it would be part of the lake, wouldn't it?

A. I expect it would.

Q. There is some dead water along adjacent to the main channel of the St. Louis River up above New Duluth, isn't there?

A. Yes, sir.

Q. What do you call that water, water of the St. Louis River or a part of the lake?

A. It would be part of both.

Q. Part of both?

A. Yes, sir.

(Witness excused).

379 LUTHER MENDENHALL was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Your name is Luther Mendenhall?

A. It is.

Q. Where do you reside, Mr. Mendenhall?

A. In Duluth.

Q. How long have you lived here?

A. I came here to stay in 1869.

Q. You came here from Philadelphia?

A. Yes, sir.

Q. You have lived here continuously ever since?

A. I have.

Q. What was your business, Mr. Mendelhall, when you first came to Minnesota and Duluth?

A. Real estate.

Q. You are a lawyer by profession and education?

A. I am.

Q. You were connected in the early days with the Western Land Association, were you not?

A. I was.

Q. Came out here from Philadelphia to represent that company?

A. Yes, sir.

Q. What lands did that company own at the head of the lakes?

A. They owned a good deal of the unplatted land around the head of the lake and upon St. Louis Bay, and quite a good deal of the platted lands as well, but not altogether the platted lands.

Q. That is, didn't own all of the platted lands?
A. No, sir.
Q. But that was the chief land company in the early days?
A. Yes, sir.
Q. And owns a great deal of property here yet?
A. Yes, sir.

380 Q. Have you been in the real estate business continuously ever since that time?
A. I have.

Mr. Fryberger: Gentlemen, I have photographs of three maps that were given to me by Mr. Mendenhall, exhibits 23, 24 and 25. I have the original maps here and the photographs are only a portion of the maps showing the head of the lakes. Mr. Mendenhall doesn't wish to part with his maps and if it is satisfactory to you I will have him identify the photographs and use them instead.

Q. I show you Minnesota's Exhibit 23, and will ask you if you recognize that as a photograph of a map that has been in your possession for a great many years?
A. Yes, it seems to be a correct copy of the map in my possession, which was itself a copy.
Q. Correct photograph?
A. Correct photograph.

Mr. Fryberger: I offer in evidence Minnesota's Exhibit 23, being a photograph of the map with the legend "Map of the head of Lake Superior, published by Lewis & McNair, real estate dealers, Duluth and Superior, drawn by J. J. Durage, civil engineer, 1888; compiled from the latest actual Government, railroad, county and private surveys."
Mr. Owen: Objected to as incompetent, irrelevant and immaterial.
The Commissioner: Don't object to it on the ground it is a copy?
Mr. Owen: He has proved the copy part of it, I think. We don't object to it on the ground that it isn't the best evidence.
The Commissioner: The exhibit will be received subject to the objection.

381 Q. Mr. Mendenhall, I call your attention to Exhibit 23 and to this dotted line starting out in the lake and coming through the Superior entry, running down through Superior bay, running up through St. Louis Bay, upper and lower bay, up past or just opposite Spirit Lake. Do you notice that dotted line?
A. Yes, sir.
Q. Was that on the original map of which this was a photograph, at the time you got that map?
A. It was.
Q. Was this a map that was in common use by people residing here at the head of the lakes from 1888 on?

A. Yes, sir.
Q. Used by you as such?
A. Yes.
Q. What was that line understood to indicate?
A. The dividing line between the State of Minnesota and the State of Wisconsin.
Q. It appears to be approximately and substantially midway between the shores of these bays all the way up?
A. Yes, sir.

Attorney-General Owen: Objected to as leading; on the further ground that the map shows for itself.

Q. Calling your attention, Mr. Mendenhall, to the waters on this map, Exhibit 23, marked St. Louis Bay, I will ask you whether or not the different portions of this bay were known under different names?
A. They were.
Q. What?
A. The upper St. Louis Bay and the lower St. Louis Bay.
Q. That to the easterly of Grassy Point was called what?
A. Lower St. Louis Bay.
Q. And that to the westerly?
A. Upper St. Louis Bay.

Q. Mr. Mendenhall, I show you Exhibit 24, Minnesota's
382 Exhibit 24, and will ask you if that is a photograph of a map that you had in your possession from and after its date, 1875?
A. It is, I believe; I haven't compared it; but it looks like it.
Q. You handed me the original of that, didn't you?
A. Yes; I would say it is a photograph.
Q. Was that a map that was in general and current use in this vicinity in the early days?
A. It was, yes.
Q. Have you found it to be a correct map?
A. It was always taken to be a correct map.

Mr. Fryberger: I offer in evidence Minnesota's Exhibit 24.
Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.
Mr. Fryberger: I will add to that offer, having printed thereon "Sectional map of the country around Lake Superior showing the cities of Superior and Duluth and their vicinities, 1875. Published by James Bardon, Superior City, Wisconsin."
Attorney-General Owen: You don't make that as a separate offer?
Mr. Fryberger: No, I just wanted to still further identify the map.

Q. Mr. Mendenhall, I call your attention to the dotted line starting out in Lake Superior, running through the old Superior entry up through Superior Bay, lower and upper St. Louis Bay, and extending as far as Fond du Lac, on that map, which line is marked

"State boundary", and on one side "Minnesota" and the other "Wisconsin." Was that dotted line on the original map at the time you got it?

A. It was.

Q. What have you to say about that being recognized as the
383 boundary between the two states at all times by those living here?

A. That was understood to be the boundary line, general understanding.

Q. I show you Minnesota's Exhibit 25 and will ask you if that is a photograph of another map that you have had in your possession since on or about the year 1882?

A. It is.

Q. And was that a map in common use among those living in this vicinity?

A. It was.

Q. Do you believe it to be a correct map?

A. I believe it is a correct map.

Mr. Fryberger: I offer in evidence Minnesota's Exhibit 25, being a map having printed thereon "Sectional map of the count-y around the head of Lake Superior showing the cities of Duluth and Superior and their vicinities. 1882. Scale two miles to one inch. Published by Lake Superior News, Duluth, Minnesota."

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

The Commissioner: Received subject to objection.

Q. I call your attention to the dotted line starting out in Lake Superior and running through the Bay of Superior, through upper and lower St. Louis Bay as far as Fond du Lac, and ask you if that dotted line with the words "State boundary" "Minnesota and Wisconsin" was on the original at the time you got it?

A. It was.

Q. And I presume your testimony is the same with refer-
384 ence to that line as the boundary, as to the other maps?

A. Just the same.

Q. Mr. Mendenhall, you never had anything to do with the navigating of these rivers and bays any more than to travel up and down with pleasure boats?

A. That is all.

Q. You are not familiar with the channels or anything of that kind?

A. No.

Cross-examination.

By Mr. Gard:

Q. When was it you said you came to Duluth?

A. 1869 to remain. I was here in 1868 temporarily.

Q. You never knew any state line questions to be referred to any of these lines on this map, to determine, did you?
A. No.

(Recess, ten minutes).

385 JOHN H. NORTON was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Norton, you are a resident of the City of Duluth?
A. Yes, sir.
Q. Have been for how long?
A. Since 1891.
Q. And you are a lawyer?
A. Yes, sir.
Q. And have been for how long?
A. About thirty years.
Q. And have practiced law in the City of Duluth how long?
A. Ever since I—Well, ever since the winter of '92, '91 and '92.
Q. Were you for some years County Attorney of St. Louis County in which Duluth is situated?
A. Yes, sir.
Q. How many terms?
A. I was in six years, three terms.
Q. That was when?
A. Well, I have been out going on five years.
Q. Prior to the time that you commenced to practice law what business were you engaged in?
A. Sailing.
Q. For how long?
A. I was sailing for ten years.
Q. Where were you sailing?
A. On the Great Lakes most of the time.
Q. All over the Great Lakes?
A. Yes, sir.
Q. When did you become a resident of the City of Duluth?
A. June, 1891.
Q. And were you sailing at that time?
386 A. No. I hadn't been sailing for about four years previous to that, but when I came up here to locate I got a job with the Inman Tug Line, and had charge of a tug for the rest of the season.
Q. For the rest of the season 1891?
A. Yes, sir.
Q. Where did you navigate that tug?
A. Around the Duluth-Superior harbor and around the St. Louis River and Bay.

Q. Have you since you have become a lawyer given a good deal of attention to marine matters?

A. Made a specialty of that.

Q. At that time, when you were navigating these waters with a tug, had the Government channel been dredged out above Grassy Point?

A. No.

Q. It had not been above Grassy Point?

A. I don't think it had.

Q. Calling your attention to Minnesota's Exhibit 3, I will ask you to state when you were navigating and when you reached the lower end of Grassy Point, what course you took and what course the navigation generally took from there up towards Fond du Lac?

A. Well, after we passed through the railroad bridge at Grassy Point, through by the old Huntress and Brown mill we kept right on up, and hugged the Wisconsin side until we got abreast of the clay banks and then we held her to the Minnesota side and went right along where this red line indicates between—is that B?

Q. No; that is G there (indicating).

A. Between G and B. And passed to the right side of this little island, it has a name but I have just forgotten it now, and then the channel followed right along around with the curve
387 of the shore until we got up Spirit Lake, and then we got at the head of Big Island we got into the river proper, and then we just followed the stream right on up.

Q. Now, is the course that you took from the southerly point of Grassy Point substantially on the red line marked A-E-G-B-C?

A. It was.

Q. And from there on up north of Big Island?

A. Yes, sir.

Q. And did you also at times go south of Big Island?

A. This is Big Island?

Q. Yes.

A. Yes.

Q. What course did you take when you were going south of Big Island?

A. Well, when we got right abreast of the point marked B, used to haul up into a channel there and run up between that head land that sticks out there and the island and passed up through what is known as the Devils Elbow.

Q. About on the line B-D and then on——

A. Right through here (indicating.) This is the Devils Elbow right at this point I am indicating now.

Q. Right at the bottom of Big Island as indicated on this map?

A. Very short turn there.

Q. What was generally known in those days when you were navigating this tug, if you know, as the mouth of the river? What did you understand to be the mouth of the River St. Louis?

A. Right down at the head of Big Island.

Q. Did you ever take this southerly course here marked E?

A. I never did. I understood there was a channel there
388 but I don't know where it was. It wasn't buoyed out and never tried it.

Q. Did you ever take the course on this light shaded line or curve which is marked H in red?

A. I did not.

Q. Do you know whether at the westerly end of that line that I have just called your attention to, marked H, there was a shoal or bar?

A. That was all shoal water.

Q. Ever get stuck there?

A. I did. I was coming down with a scow loaded with wood one night and it got dark when I was abreast of Ironton over here, and when I got around up to the point to haul up I couldn't see the clay banks. There was no channel there so far as Government buoys were concerned, no stake, and I got over there to the eastward of the channel and got hard aground and lay there till noon next day before a tug came along and pulled me off.

Q. Was the water deeper in the line marked B-C than it was at this point you have indicated just easterly of C?

A. It was.

Q. And the main navigated and navigable channel was substantially on the line A-G-B-C?

Attorney-General Owen: Objected to as calling for a conclusion of the witness.

A. Yes.

Cross-examination.

By Mr. Gard:

Q. When did you say you came to Duluth, Mr. Norton?

A. 1891.

Q. How long did you operate this tug?

A. From about the first of August until some time in December until it froze up.

389 Q. And what were you doing?

A. I was master of the tug.

Q. What were you doing with it most of the time?

A. Well, Mr. Inman had a general tug line and the larger tugs were handling vessels and the smaller tugs were doing the up river work, towing scows mostly from a stone quarry up there near Chamber's Grove, and I used to make about two or three trips a week for stone scows for a couple of months. During the months of September and October mostly I was running that pretty near all the time.

Q. About how many trips did you make up the St. Louis would you say?

A. I made, I think, on an average of about three a week.

Q. For how long?

A. For a couple of months.

Q. Is that about all the navigation of the St. Louis you did?

A. That was all the navigation that I did as master of a tug. I have been up and down it a great deal with other craft.

Q. Other craft—You mean pleasure craft?

A. Yes.

Q. Light draft crafts?

A. Yes.

Q. This tug, how much water did it draw?

A. I think about five feet. It is what is known as a light draft tug.

Q. You said you got stuck one time in the dark, was it?

A. You bet.

Q. Do you know where it was you got stuck?

A. I know pretty well, yes. I couldn't go within ten feet of the place, I don't suppose, but I know approximately where it was.

Q. You say you couldn't see the mud banks?

A. Couldn't see the clay banks. You see right at this point here there is one, two, three, four, four projections and four indentations in the shore and each one of those has a very dis-

390 tinct clay bank.

Q. That's out just as you got through Grassy Point?

A. That is about opposite the letter E in the indicated channel there.

Q. You were coming down the channel northerly of Big Island when you got stuck, you say?

A. Yes, sir.

Q. Where was it you got stuck, do you think?

A. Well, I think we were right in the neighborhood of this place marked right in here (indicating) somewhere right in this location.

Q. That is at the location that is a little above the northerly line of what is marked there as "Coal dock" extended into the water?

A. Yes.

Q. At the place that the sounding is indicated on this map at twelve feet, isn't it?

A. No; I can't say just—That is twelve and a half. There is one three and a half. Another two and a half. Another seven. And one two. It is right in that neighborhood.

Q. That is, you were in the soundings that are marked 2½, 3½, 12½, 5 and 6?

A. Yes, and 7, along in there. I was in that neighborhood.

Mr. Bailey: Right easterly of the point marked C; is that it?

The Witness: Not exactly.

Mr. Bailey: Southeasterly?

The Witness: It would be kind of northeast, wouldn't it?

Mr. Bailey: Northeast of the point marked C; is that the way you locate it?

The Witness: I think it would be.

391 Redirect examination.

By Mr. Bailey:

Q. The Inman Tug Line for which you were working was quite a wellknown line at that time, was it not?
A. Yes, sir.
Q. And had quite a large number of tugs?
A. Yes, it had seven or eight tugs.
Q. And was the course you have indicated as the one that you took the one that was generally taken by the tugs of that line?
A. Yes, sir.
Q. Was that the same course that was taken by boats generally, not only your line but any traffic that went up there?
A. I think so.

Mr. Gard:

Q. Were there any Government buoys up above Grassy Point at the time you navigated up there?
A. No, sir.
Q. Were there any buoys of any kind?
A. None whatever. (Witness Excused).

Mr. Hanitch: Minnesota's Exhibit 26 is a map purporting to have been published by Charles LeGro, County Clerk of Douglas County, Wisconsin, and is a map purporting to be of Douglas County and the waters of Lake Superior and that vicinity. I wonder if you gentlemen wouldn't admit that Charles LeGrow was the County Clerk at that time? I think the Commissioner remembers that he was at that time county clerk.

The Commissioner: The Commissioner isn't supposed to have any knowledge on the subject, but I guess he was County Clerk.

392 Mr. Gard: Do you claim it was an official map as County Clerk?

Mr. Hanitch: I am claiming it was a map that was made or published, compiled, drawn or published, by Charles LeGro, County Clerk. I simply want to know whether you will admit that in 1889 Charles LeGro was County Clerk of Douglas County.

Attorney-General Owen: I don't see that it makes any difference whether he was or not.

Mr. Gard: Are you trying to get us to admit that this Charles LeGro made this map as an official map as Clerk of Douglas County?

Mr. Hanitch: That is a legal conclusion or a matter of argument. I asked you whether you will admit that Charles LeGro was in 1889 County Clerk of Douglas County?

Attorney-General Owen: We won't admit it unless you will admit it isn't an official map.

Mr. Hanitch: You refuse to admit that he was the County Clerk at that time?

Mr. Gard: We do because it is evident from what you have said that you are going to argue from that that he issued this as an offi-

cial map, and we all know that he did not issue it as an official map, and we consider it unfair for you to undertake to get a question in this record that you can argue in that manner. You can easily prove it is an official map if it is an official map.

Mr. Hanitch: We will prove that later. I want you now to admit this fact if you will——

393 Mr. Gard: That's just what we will not do because you intend to use it unfairly.

Mr. Hanitch: I resent this insinuation. I will call the Commissioner. Will you take his word, not under oath?

Mr. Gard: No, sir, we will not take his word for it.

Mr. Hanitch: Let the record show that they are not willing to take the word of the Commissioner.

394 WILLIAM TIEDEMAN was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Hanitch:

Q. Mr. Tiedeman, your full name?
A. William Tiedeman.
Q. You reside where?
A. At Superior.
Q. How long have you lived there?
A. Since 1889.
Q. Do you hold an official position with the City of Superior?
A. City assessor.
Q. For how long have you held that position?
A. Since 1905.
Q. Did you hold any official position prior to that time?
A. Yes, sir.
Q. What position?
A. I was a member of the Board of Aldermen.
Q. For how long?
A. I am not quite sure but I think three terms of two years each. I am not positive of that. Either two or three terms.
Q. Now what are your duties as assessor of Superior?
A. List and value property for assessment purposes.
Q. Does that include all of the property of the City of Superior?
A. Yes, sir.
Q. Witness being shown Minnesota's Exhibit 3 is asked whether he recognizes that as a map showing that part of Superior which is located on the Bay of Superior, St. Louis Bay and St. Louis River?
A. Yes, I have seen the map.

Q. In your official position are you required to examine
395 and assess property which borders on these waters?

A. Yes, but not from this map.
Q. No, I don't mean that.
A. Yes.

Q. Now, about how far do the city limits extend, as shown by this map, and bordering upon these waters?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial; on the further ground that the map shows for itself.

The Commissioner: The Commissioner rules that the objection is well taken but the evidence will be taken subject to the objection. The map shows for itself.

Mr. Hanitch: The map doesn't purport to show the limits of Superior.

Attorney-General Owen: That is what your question asked him, as shown by the map.

A. This map doesn't show the southerly limits of the City of Superior as it is.

Q. Well, there is on this map a stream marked Allouez River that runs into Allouez Bay. This river is shown on the southerly end of the map. Is that in the City of Superior?

A. Yes.

Q. This map also shows waters marked "Pokegama Bay" on the westerly end of the map. Are those shores on the easterly side of Pokegama Bay in the city limits?

A. I should say both shores of Pokegama Bay was in the city limits as I understand it.

Q. Does this map show the harbor line on the Superior side of Superior Bay and St. Louis Bay and upper St. Louis Bay
396 and Pokegama Bay?

Attorney-General Owen: Objected to on the ground that the map shows for itself and if it doesn't, the witness is not competent to testify.

The Commissioner: You may answer, Mr. Witness.

A. There is a line presumably indicates the harbor line. I can't say that it is.

Q. Is it similar or approximately the same as the harbor line which is marked upon the map which you use to make the assessment?

A. Yes.

Q. Now, Mr. Tiedeman, looking upon this map, state whether the improvements as shown on the map, if in fact they do exist, and give as nearly as you can remember their value, starting at the point marked Allouez River. I think the first industry mentioned there is "Elevator" and C. St. P. M. & O. Railway freight house, is it not?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial; on the further ground the witness is not competent to testify.

Q. That runs out to the dock line, does it not, on Allouez Bay?

A. Well, substantially so. The building itself does not, but the dock does.

Q. Do you assess that property?

219

A. We do not.

Q. The next property north of that is the Pittsburg Coal Company dock number 5 that runs out to the dock line, does it not?

A. Approximately, yes.

397 Q. Do you assess that?

A. Yes, sir.

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

Q. What is the value of that property?

Attorney-General Owen: Objected to as incompetent, irrelevant, immaterial, and on the ground that the witness is not competent to testify.

The Commissioner: The commissioner can't see the relevancy of value, but the evidence must be taken. If you can answer you must do so.

A. Well, it's a question. You say the value or the assessment?

Q. Well, the real value as you know it.

A. I don't believe I could——

The Commissioner: Assessment value and real value are supposed to be the same, aren't they, in Wisconsin?

A. They are supposed to be, yes.

The Commissioner: If you know one may be that can answer the other.

Attorney-General Owen: He is framing his own questions—the counsel.

Q. What in your judgment was the property worth?

Attorney-General Owen: Same objection.

The Commissioner: Witness may answer if he can.

A. I am not prepared to state the value of that property.

Q. Have you any judgment at all as to what the value of that property is?

Attorney-General Owen: Objected to as leading his own witness, cross-examining him.

398 The Commissioner: The witness may answer if he can.

A. I couldn't answer that only by what the assessed valuation is.

Q. What is the assessed valuation as you remember it?

Attorney-General Owen: Objected to as not the best evidence.

The Commissioner: Witness will answer if he can.

A. Best of my recollection is about—I don't know as I can remember that. Somewhere about 465,000, to the best of my recollection.

Q. North of that property comes the ore-docks of the Great Northern Railway Company?

A. Yes, sir.
Q. How many docks are there there?
A. Four.
Q. They extend to the dock line, do they, approximately?
A. Approximately.
Q. Do you assess those?
A. We do not.
Q. You have been over them, haven't you?
A. Yes.
Q. They are very valuable structures, are they not?
A. Part of them are.
Q. What would you say as to whether they are worth several million dollars or not?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial and on the further ground that the witness is not competent to testify.

A. The four of them would without a doubt be worth several million dollars.
Q. How long has the Pittsburg Coal Dock been in there?
A. I couldn't say. It was there when I started the work.
399 Q. Been there more than fifteen years; is that true of the ore-docks?
A. Some of them.
Q. Now, passing beyond the Nemadji River and north we find the N. P. Coal Dock. That extends out to the dock line, doesn't it, substantially?
A. Yes, sir.
Q. What was the value of that?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial and on the ground that the witness is not competent to testify.

Q. I don't care that you be exact. Is it worth several hundred thousand dollars?
A. That is rather difficult to set a valuation unless some proportion—Offhand, I should say that is worth about fifty or sixty thousand dollars.
Q. Passing north of that we have the three mill properties, do you not?
A. Yes, sir.
Q. Those extend practically out to the dock line?
A. No, they do not.
Q. You assess those properties, do you not?
A. Yes, sir.
Q. What did you say in round numbers they were worth?

Attorney-General Owen: Same objection as before.
The Commissioner: The witness may answer the best he can.

A. I couldn't place any valuation on those.

Q. Are they worth more than two hundred thousand dollars, those three mills?

A. There are only two mills there, the Daisy and the Listman. The Anchor is out of commission, just a shell.

Q. Well, the Daisy has a capacity of 4,000 barrels a day, hasn't it?

400 A. About that.

Q. And the Listman has a capacity of 2,000, does it not?

A. Somewheres from 1500 to 2000.

Q. What would you say these properties were worth—over a hundred thousand dollars?

A. Oh, they might be worth more than a hundred thousand; be worth probably two hundred thousand, take them all together.

Q. They have been there longer than you have been assessor, have they not?

A. Yes.

Q. All of these properties have been there more than twenty years, haven't they?

A. Excepting the ore-docks. Some of them have been constructed since.

Q. Just north of the mills are two large elevator systems, are there not?

A. Yes.

Q. They have a capacity of 2,500,000 bushels each, do they not?

A. About that.

Q. You have assessed those?

A. Yes, sir.

Q. Would you say they were worth more than 200,000 dollars?

Attorney-General Owen: Same objection.

A. Yes, they were worth more than that.

Q. They extend out to the dock line?

A. Approximately.

Q. And have been there twenty years?

A. Yes.

Q. Now, passing on north to what is marked here as Connors Point, state whether or not there are a great many coal docks on the easterly side of Connors Point?

A. Yes.

Q. You assess them, do you not?

A. Yes, sir.

401 Q. And they all extend out to the dock line approximately, do they not?

A. Yes, most of them are out to the dock line.

Q. And they have been there, some of them twenty years or more, have they not?

A. Some of them were there longer than that and some of course less.

Q. There are the Northwestern Coal Dock number 1, the Hanna

Dock, the Northern Coal Deck, and the P. & R. Dock, are there not?

A. Yes, sir.

Q. And the old St. Paul and Pacific at the end of the point?

A. Yes, sir.

Q. Now, would you say that these five docks were worth more than $2,000,000?

Attorney-General Owen: Same objection.

A. Yes, I think they would be worth more.

Q. Now, passing around Connors Point into St. Louis Bay and into Howard's Pocket, we have in there improvements, the Superior Shipbuilding Company, two or three wholesale mercantile companies and several industries and a number of elevators, have we not?

A. One elevator.

Q. In Howard's Pocket and Tower Bay slip?

A. In Hughitt Slip and Howard's Pocket.

Q. Would you say that those properties in the aggregate are worth a million dollars?

Attorney-General Owen: The same objection to that.

A. Oh, yes, yes, easy.

Q. And they have been there more than twenty years, have they not?

402 A. Well, some have not; the elevator hasn't.

Q. The ship yards have been, haven't they?

A. Ship yards have been there.

Q. Now, passing on to the west we have the Globe Elevator System and the Northwestern Fuel Company's Dock. They extend out to the dock line, do they not?

A. The Globe Elevator does not, but the Northwestern Fuel, number three, does, or substantially.

Q. And they have been there more than twenty years, have they not?

A. Yes.

Q. And those two industries would be worth over half a million dollars would they not?

Attorney-General Owen: Same objection.

A. I doubt it.

Q. Would you say they were worth over two hundred thousand dollars?

A. Not over. I don't think they are worth that.

Q. Passing to the west of that we come to the Great Northern Elevator system and the Great Northern Railway Company's warehouse. Those extend out to the dock line on the St. Louis Bay, do they not?

A. The elevator system doesn't extend to the dock line.

Q. Well, almost to it, does it not?

A. Well, it would be approximately. The buildings do not extend out. The dock——

Q. That is a very large elevator system holding over six million bushels of wheat, is it not?

A. About that.

Q. And the railway warehouse there is half a mile long, is it not?

A. Just about 2,800 feet, I guess, is what it is.

Q. Those structures have been there more than 20 years, have they not?

403 A. Well, yes, I guess the flour sheds have been there that long. The elevator, the new one, hasn't.

Q. Part of the elevator system has been there?

A. Part of it has.

Q. These two industries there would be worth over two million dollars, would they not?

Attorney-General Owen: Same objection.

A. Yes, I think so.

Q. Passing west of that you find the Northwestern Fuel Company dock number 2, then the Carnegie Coal Dock number 1, Great Lakes Coal and Dock Company, Island Creek Coal Dock, and Berwind Fuel Company and Reise Coal Company. In all there are five large coal docks there that extend out approximately to the dock line of the St. Louis Bay, do they not?

A. Except the Reiss.

Q. That is about halfway to the dockline, is it?

A. Perhaps a little more than halfway now.

Q. Those docks have been in there in some form or other for more than twenty years, have they not?

A. The Berwind hasn't.

Q. But the others have?

A. The others have.

Q. What would you say those five docks were worth in round numbers?

Attorney-General Owen: Same objection.

A. Well, I wouldn't care to say; wouldn't be able to say.

Q. Well, are they worth over two million dollars in the aggregate?

A. Including the Berwind?

Q. Yes.

A. Yes; they are worth more than that. They ought to

404 be worth more.

Q. Passing westerly of that we have the M. S.——

A. Soo Ore-Dock, commonly known.

Q. That is the Minneapolis, St. Paul and Sault Ste. Marie Railway Company Ore-Dock. That extends out approximately to the dock line, does it not?

A. No, not yet.

Q. They are building an extension?

A. Extended last year but it doesn't extend out to the dock line as yet.

Q. Part of that dock has been in about how long?

A. I think the first part was built in 1913, if my recollection serves me right, first portion,—added since.

Q. What would you say that dock was worth in round numbers?

Attorney-General Owen: Same objection.

A. That property, before the new extension was put on, was worth about $625,000.

Q. Now, Mr. Tiedeman, in assessing this property that we have discussed here as far as the Soo dock what is your practice to determinate the acreage in the tract of land assessed?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

A. The practice is to calculate the acreage up to the established Government dock line.

Q. And who assists you in that? What other city official?

A. City engineer.

Q. And then you assess that property at so much per acre, do you?

A. Yes, sir.

405 Q. Multiplying it by the number of acres that is on the shore and under the water out to the dock line?

A. Yes, sir.

Q. In your experience in that office have you undertaken or has the City of Superior ever undertaken to assess any land outside of this dock line up to the point of the Soo ore-dock?

Attorney-General Owen: Objected to on the ground that the action of the officials of the City of Superior are not binding upon the State of Wisconsin and are incompetent, irrelevant and immaterial.

Q. I will modify that by saying, commencing with the Great Northern ore-docks and going north and around Connors Point and up St. Louis Bay as far as the Soo Railway Company ore-dock?

Attorney-General Owen: Same objection to that question.

A. No, there isn't anything, in that territory.

Q. How far to the west do you assess the shore lands by measuring the amount of acreage out to the dock line,—that is to the west of the Soo Railway?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial; further, on the ground that the action of the officers of the City of Superior is not binding on the State of Wisconsin.

The Commissioner: He may answer so far as within his knowledge.

A. The assessment, including to the dock line, runs west up to an extension of what is called Belknap Avenue, to the dock line.

Q. Is Belknap Avenue shown on that?

A. Yes, here it is. (Indicating.)

406 Q. Further west of that, Mr. Tiedeman, what method did you use to assess the valuation of these shore lands?

A. We assess according to the Government survey, Government lots.

Q. Why do you not measure out the acreage of those pieces?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

A. I have deemed it impracticable to determine where the so-called riparian rights appurtenant to each lot might carry it to, compared with the dock line.

Q. That is the indentations make the land so irregular you cannot trace it to the dock line?

A. With anything of a definite idea of the amount of acreage.

Q. But in your valuations you did or do consider the fact that these lands do extend out to this dock line, do you not, and give them some higher value than inside lands?

A. Not particularly the dock line but the riparian right that might attach to them.

Q. When did you first assess any property outside of this dock line?

A. 1913.

Q. And what did you assess then outside of this dock line?

A. For one thing assessed a piece here that ran on the other side of the dock line.

Q. Indicating the deep water line marked H?

A. Yes; that is it.

Q. You have undertaken to assess how much there, Mr. Tiedeman?

A. I think it was approximately 110 acres, as I remember it.

Q. How did you determine that; what boundaries did you give it?

407 A. Gave it the boundary of the original channel of the St. Louis River and the established dock line as established by the Government.

Q. That is the established dock line on the Minnesota side. You took in there a sort of a half circle, did you?

A. Took it in just out, that H line.

Q. Prior to that time you have never undertaken to assess anything outside of the Wisconsin dock line, have you?

A. No, sir.

Q. Now, going back to Superior Bay and just to the east of what is marked "Northwestern Coal Wharf", the city owns, does it not, a large tract of land there under water?

A. About forty acres.
Q. They purchased that when?
A. Probably bought it in 1910 or '11, somewheres thereabouts.
Q. And that was purchased and described by the boundary of the dock line, was it not?
A. Yes, sir, it was.

Attorney-General Owen: Who purchased it?
The Witness: The city purchased it of McCord. It is known as the McCord tract.

Q. Mr. Tiedeman, how did you happen to commence assessing that land on the Minnesota side in upper St. Louis Bay within the circle marked H there, that you say you began to assess in 1913?

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.
The Commissioner: You may give the reasons so far as you can.

A. The reason was at that time that the property had come in use and improved and court decisions seemed to clearly put it in
408 Wisconsin.
Q. What court decision do you refer to?
A. St. Louis, I think the case came from St. Louis, as I remember, the United States Circuit Court.
Q. Circuit Court of Appeals?
A. Court of Appeals.
Q. When you say St. Louis you mean St. Louis, Missouri?
A. It was reported there, as I remember.

The Commissioner: Was that the Whiteside—Norton case?
The Witness: Yes.

Q. You have continued to assess it since 1913?
A. Yes.
Q. And that has been under protest from the Zenith Furnace Company and the Carnegie Coal Company, hasn't it?

Attorney-General Owen: Objected to as incompetent, irrelevant, immaterial, calling for a conclusion of the witness, and on the ground that he is not competent to testify.

A. There has been no formal protest from the Zenith Furnace Company to my knowledge.
Q. Has there been formal protest from the Carnegie Coal Company?
A. Formal protest before the Board of Review from the Carnegie. The Zenith paid their taxes.

Mr. Bailey: Protested when they paid?
The Witness: I find no record of protest entered, as my recollection serves me, on the last assessment and the second last one.
Q. Did you receive the tax?
A. I did not.

Q. You only have to do with the assessment?
A. Assessment.

409 The Commissioner: Do you know, it might clear up matters a little bit, what is the fact as to whether the dock line established by the United States and the City of Superior coincide or nearly so on the course you have described from the mouth of the Nemadji westward?

The Witness: I think that is true. There was an attempt at one time to make a change at Howard's Pocket but subsequently the city lines and the Government lines coincide, what I know of.

The Commissioner: Another fact that might clear up something. Is the land platted on St. Louis Bay up to Belknap Street, rather than eastward from Belknap Street, down the other bay?

The Witness: The land platted up to Belknap coming from the east—no, it is not. All this land was west.

Q. Of the Globe Elevator?

A. Practically all the land facing the St. Louis Bay is not platted but sold generally by meets and bounds, and there is only one Government lot description right at Belknap, on the dock line.

The Commissioner: What we used to call Section 16 in Town. 49-14 there, hasn't been platted much of it, or any of it.

The Witness: It has not; that is, the north end isn't platted.

The Commissioner: Is there any platting above Belknap Street on the shore there or not?

The Witness: There is not.

Q. The land is platted on Superior Bay, is it not?

A. Superior Bay is platted clear up to Connors Point—plat of Connors Point.

410 Q. There you extend the lot lines right out to the dock lines, as I understand it, and calculate the acreage?

A. Yes, sir.

The Commissioner: In front of the old town in the old plat of Superior proper there is submerged land there platted, is there not, to some extent?

The Witness: Yes, there is.

The Commissioner: But in front of Superior City they are not?

The Witness: Well, from Superior City there is submerged land but they are platted there. That fill—Barker Island—fill made.

The Commissioner: That is not platted west, from half a mile west of the elevators there to Connors Point as submerged land?

The Witness: Supposed to be platted.

The Commissioner: There the shore lots carry out?

The Witness: Shore lots, yes.

By Mr. Fryberger:

Q. Calling your attention to that property you say you assessed in 1913 on the Minnesota side, being the property marked "Carnegie Coal Company" on Exhibit 3 and property marked "Coal

Dock," being the Zenith Furnace Company's property, the Carnegie Coal Dock Company or Pittsburg and LeHigh Coal Company have protested against paying taxes and being assessed at every step, have they not?

A. Not to my knowledge they haven't.

Q. Don't you know they filed formal protest against paying their taxes?

A. Filed formal protest before the Board of Review.

Q. Didn't they pay their taxes under protest every time they paid or don't you know anything about it?

411 A. I examined the rolls I think one year and I found no protest entered.

Q. The Carnegie Coal Company?

A. Yes. There may have been a protest filed but there is nothing to indicate on the tax roll that it was paid on a protest. That doesn't come through my department.

Q. You don't know about that?

A. No.

Q. You don't know whether each receipt showed that fact?

A. No.

Q. Have you continued to assess that property ever since 1913?

A. Yes, sir.

Q. And are keeping at it now?

A. Yes, sir.

Q. You know, do you, that the property is being assessed in both states?

A. I know it is assessed in Wisconsin. I don't know whether it is assessed in Minnesota or not.

Q. What is your understanding of it?

Attorney-General Owen: Objected to as incompetent, irrelevant and not the best evidence.

A. I don't know that it is.

Q. You have heard that it was, haven't you?

A. No, I don't know as I have.

By Mr. Bailey:

Q. You don't know whether the Zenith Furnace Company filed a protest there?

A. I couldn't say they did.

Q. You couldn't say that it didn't, either, could you?

A. No.

By Mr. Hanitch:

Q. Did you know Charlie LeGro in his lifetime, Mr. Tiedeman?

412 A. I don't remember that I knew him. I came here in the spring of 1889 and I wasn't much acquainted.

Mr. Hanitch: We will offer this Minnesota's Exhibit 26 in evidence, reserving the right to offer further proof as to the parties who made the map.

Attorney-General Owen: Objected to on the ground that it is incompetent, irrelevant, immaterial, and has not been proved to be a map in general circulation anywhere.

The Commissioner: It is received subject to that further proof.

Cross-examination.

By Mr. Gard:

Q. Mr. Tiedeman, I will ask you whether or not in assessing the property acreage out to the dock line you don't add something for the appurtenant riparian right that extends out beyond the dock line to the center of the stream?

A. I don't quite catch your meaning, Mr. Gard.

Q. Do you add anything to the value of the acreage because there is water privileges out beyond?

A. Yes, we would.

Redirect examination.

By Mr. Hanitch:

Q. That means that the fact that it runs to the dock line where it can reach the shipping facilities. You think it has more value than if it hasn't that access to the channel; is that so?

A. I don't know as I get the question very clear. If you figure the full acreage clear out to the dock line, no question about any further, we simply assess the acreage up to the dock line, including the whole body, while if we assess the Government lot to
413 the shore line, and for any possible riparian right we do increase the valuation on a Government lot.

Q. What did you have in mind, Mr. Tiedeman, when you say that there is some added value for extension to the center of the channel? What channel did you have in mind, for instance take this property along Superior Bay, what channel did you have in mind there when you say you gave it some additional value because it has riparian rights to the center of the channel?

A. Well, take it along Superior Bay front here as our understanding always has been there hasn't been any question but what all rights ceased at the established dock line.

Q. And now isn't that true up here in St. Louis Bay?

A. No, it is not.

Q. Where did you think in St. Louis Bay they extended to?

A. There is various places here. There is indication, or we thought, was further than the dock line.

Q. Here is St. Louis Bay. What is there in there that indicated you had rights beyond the dock line?

A. Well, for instance here is the channel (indicating); here is the dock line.

Q. So, there you assessed beyond the channel, didn't you?

A. We assessed these lots here (indicating).

Q. Didn't you measure the acreage on that?

A. No, sir.

Q. Isn't that this side of Belknap Street extension?
A. No. That there?
Q. No, this lot here (indicating). The lot lying between the Northern Pacific bridge and the Belknap extension. Doesn't
414 the dock line show that it goes beyond the channel and goes into the Government channel?
A. That is, you mean the dock line?
Q. Goes into the Government dredge channel?
A. Yes.
Q. Goes beyond what apparently is a deep water mark there?
A. Yes.
Q. So you really assess beyond that old channel there, don't you?
A. In that case our acreage is calculated up to the dock line.
Q. Then that is beyond that old channel, isn't it?
A. Yes, in that case, yes.
Q. Now, coming back to Superior Bay. There is an old channel on this bay, apparently, is there not?
A. Yes, sir.
Q. And some places that old channel runs right up to the dock line, and other places it is very far from the dock line. You never make any difference in your valuation on account of the location of that old channel, do you?
A. Not here we don't, no.
Q. No, you simply fix your valuation according to this dock line and according to the dredged channel?
A. Not the dredged channel. According to the dock line as established, because it isn't dredged up to the dock line there (indicating),
Q. You don't consider in your calculations this old channed in the Bay of Superior, do you?
A. No channel there. It's nearly between the dock lines.
Q. And it is further away from the dock line at the easterly end of the bay than it is at the westerly end of the bay? Your dock line cuts it at the northerly end of the bay, does it not?
415 A. The channel doesn't go in here at all—the original channel.
Q. Doesn't this old channel here show that it runs into the dredged channel (indicating)?
A. (No answer).
Q. Now, Mr. Tiedeman, you said that in the assessment of the land on the Minnesota side you were moved by the fact that that land had been improved; is that right?
A. Improved, and court decision was the reason.
Q. Now to be perfectly honest, wasn't it the court decision entirely?
A. I think the court decision——

Attorney-General Owen: Objected to as cross-examining his own witness.

Mr. Hanitch: Well, he is an officer of the State of Wisconsin.
Attorney-General Owen: No, he is not.
The Commissioner: The witness may testify.

A. I think the greater influence was the court decision, sure.

Q. Isn't it a fact that on our side of the bay you assessed the la inside of the dock line regardless of whether it is improved or n don't you, on the Wisconsin side?

A. Yes, we assess lands there under water.

Q. Then if you thought you owned the land on the Minnes side you would have assessed that independent of any improveme wouldn't you, if you had followed the rule?

A. We did assess it.

Q. But you testified you didn't assess it until it was improved?

A. We assessed these lots here at a higher rate of valuation (In eating).

Q. And they are all inside of the Wisconsin dock line, are th not?

416 A. Inside of the black line there called the dock line.

Q. That is the dock line; that is the same kind of a do line as there is on the Minnesota side, isn't it?

A. Yes, but the general understanding has always been wi all of us that the St. Louis River was the dividing line between t cities. For that reason there is a great many of these here (indic ing) that we add value to the assessment because of the greater ar because we didn't figure, because we can't figure——

Q. You never have tried to reach over the dock line on the Min sota side until this court decision?

A. We have not.

Q. And the fact and truth is that you were influenced in the sessment of the Carnegie and the Zenith Furnace Company entir by that decision, isn't that so?

A. I think that is probably true.

Q. Otherwise you would be discriminating, wouldn't you, becau on the Wisconsin side of the bay you assess the land independent any improvement, do you not?

A. We assess it the same as we do there, all the land. We ass the full acreage where we know——

Q. I am calling attention to your testimony in which you und took to testify here that you were influenced by the improveme and not entirely by the Court decision?

A. (No answer).

By Mr. Bailey:

Q. Mr. Tiedeman, the state taxes of Wisconsin are levied up the basis of your valuation, are they not?

A. They are not.

Q. They are not?

A. No, sir.

417 Q. Who values them besides you?

A. The State Tax Commission.

Q. They simply review your work.

A. No. The State taxes are levied by a valuation the State T Commission fixes.

Q. They fix one valuation every year and you fix another?
A. Yes, fix a valuation for the purpose of levying a state tax.
Q. Entirely different from yours?
A. Yes.

By Mr. Hanitch:

Q. They use the same areas that you use, do they not?
A. I don't know. They fix it as a county.

Re-cross-examination.

By Mr. Gard:

Q. Mr. Tiedeman, you stated there that you added something to these lots here and you didn't indicate what lots you meant. What lots did you mean by these lots here (indicating)?
A. I mean all of these so-called Government lots lying west of this where Belknap Street runs into the—all this property on the St. Louis River along—is called Government lots. And these Government lots, as I understand it, only carry the actual area to the shore line of land, and our assessment rolls carry the number of acres represented according to the Government survey. It is only up to the shore line. Does not include any area outside of the shore line.
Q. What do you add there for that area outside of the shore line?
A. Runs anywhere from 25, 33, 50, and in cases as high as a hundred per cent, of course, on these lots around these points.
Q. Because of what?
418 A. Because of riparian appurtenants there.
Q. Whatever it is.
A. Whatever it may be.
Q. And how far did you consider it in making this assessment that that riparian right extends, to the channel or not?
A. To the channel. All based on the channel.

Re-redirect examination.

By Mr. Hanitch:

Q. Lot 1 in Section 17 contains, dry land, less than an acre, does it not?
A. I think it is about seven-tenths.
Q. And you assess it as eight acres?
A. Eight acres.
Q. How do you get the eight acres?
A. Figured out to the dock line.
Q. So it isn't true that when you come to Government subdivisions you were not guided by the dock line?
A. I said from that point up to that point it's been——
Q. Isn't a fact, Mr. Tiedeman, that from that point westerly the indentations are such and the shore lines are so irregular that it is impossible to determine just how many acres what the land under the water out to the dock line, each parcel is entitled to?

A. It certainly is.
Q. That is the real reason?
A. That is the very reason we haven't attempted to get the whole acreage because we felt it wasn't practicable to determine the lines.

(Witness excused).

419 JOHN G. HOWARD, recalled as a witness on behalf of the State of Minnesota, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. I show you Minnesota's Exhibit 27. I will ask you if that is a correct photograph that I asked you about when you were first on the witness stand, a map that was given to you by your father and that I believe you said you wanted to keep?
A. Yes, sir, it is.
Q. And it is considerably worn through age and time?
A. Yes.
Q. That dotted line starting at Lake Superior and running up through the Bay of Superior and St. Louis Bay and on up to Fond du Lac, marked out on the lake "State boundary Minnesota and Wisconsin", that was on there at the time you got that map from your father?
A. Yes, sir, it was.

Mr. Fryberger: Offer this in evidence, Minnesota's Exhibit 27, in lieu of the original map.
Attorney-General Owen: Objected to as incompetent, irrelevant, immaterial.
Mr. Fryberger: Don't object to it because it is the photograph?
Attorney-General Owen: No.
The Commissioner: The same is received in lieu of Exhibit number 2.
Attorney-General Owen: When was this photograph made?
Mr. Fryberger: Made by the man that photographed this
420 crowd, this week.
The Commissioner: Does that appear as a stipulation, that it was made within the last week?
Attorney-General Owen: No.
Mr. Fryberger: I will make the statement that it was photographed within the last three or four days.
The Commissioner: Statement received.

Q. Mr. Howard, I show you Exhibit 28 and will ask you if that is a map that you have had in your possession for a number of years?
A. Yes, sir, it is.
Q. And you have gotten that out of your papers since this trial commenced?
A. Yes, sir.
Q. You have had it since on or about the day of its date?

A. Yes, sir.

Q. Was that an accredited map generally among the people of this vicinity?

A. Yes, sir.

Q. Soon after its date?

A. Yes, sir, it was.

Q. And was the dotted line running from Superior entry through the Bay of Superior and St. Louis Bay up as far as Spirit Lake or betyeen Spirit Lake and Clough Island on that map at the time you got it?

A. It was.

Q. Do you believe the map to be a correct and accurate map?

A. I do.

Mr. Fryberger: Offer in evidence Exhibit 28.

Attorney-General Owen: Objected to as incompetent, irrelevant and immaterial.

421 The Commissioner: Received geographically subject to the objection. Geographically, I suppose it might be a little doubtful.

Mr. Gard: You didn't have anything to do with making these maps, did you?

The Witness: No, sir.

Mr. Bailey: I will offer in evidence Minnesota's Exhibit 29, being a map issued by the State authorities of Minnesota 1910 and '11, or compiled in 1910 and '11.

Attorney-General Owen: Objected to as incompetent, irrelevant, and immaterial; on the further ground that it has not been proven to be an accurate map, one issued by the Minnesota authorities or anybody else.

(Witness excused).

422 J. A. Scott was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. What is your name?

A. J. A. Scott.

Q. You reside in the City of Duluth?

A. Yes, sir.

Q. How long have you lived here?

A. Thirty-one years.

Q. What is your business?

A. Assessor of the City of Duluth.

Q. How long have you been assessor?

A. I am now on my seventh year.

Q. Mr. Scott, at the request of Mr. Bailey and myself have you

gone carefully over the dock property extending beyond the Zenith Furnace Company property up as far as Rice's Point on the Minnesota side of the bay and made an estimate of values at the present time?

A. Yes, sir.

Q. Now, I wish you would start with the Zenith Furnace Company property that is marked on this map, Defendant's Exhibit 3,—Just get the red ink, Mr. Bailey, and you mark them as he calls them off, if you will, please. Take the Zenith Furnace Company property dock. What do you consider at the present time is the fair and reasonable value of that dock property?

A. $750,000.

Q. That is marked 1.

A. That wouldn't include any property——

Q. I am speaking now about the dock property. Number 2, the Chartier Mining Company property?

A. $100,000.

Mr. Fryberger: Marked number 2 by Mr. Bailey on Minne-
423 sota's Exhibit 2.

A. Chartier Mining Company has one-half of the dock; Pittsburg & Lehigh has the other half.

Q. Carthier Mining Company has the east half and the Lehigh the westerly half; that is right, isn't it?

A. That is correct.

Q. Pittsburg & Lehigh is number 3. What valuation do you place on that?

A. $1,015,000.

Q. Number 4, Island Creek Coal Company?

A. $860,000.

Q. Number 5, The Berwind Fuel Company?

A. That is marked 6 on there.

Q. Marked 6, but put it 5 on the map. Just make it correct. You have skipped 5.

A. That is below the railroad track.

Q. Well, call it 6. He hasn't got 5 here.

A. Five is down lower.

Q. Mark it 6, Berwind Fuel Company. What——

A. $1,109,000.

Q. Number 8, Canadian Northern dock?

A. $140,000.

Q. Number 9, Duluth-Superior Dredge Company dock?

A. $50,000.

Q. Number 11, Boston Coal-Dock?

A. $120,000.

Q. Numbers 12 and 13 are the Pittsburg and S. S. Co. and D. M. & N. Coal-Dock jointly?

A. $650,000.

Q. Number 15, Duluth, Missabe & Northern ore-dock?

A. For the entire dockage there $8,000,000.

Q. Number 5, going back, Mr. Scott, to the Lesure Lumber Company?

A. $230,000.

Q. Number 7, Alger-Smith Lumber Company?

A. $180,000.

Q. Number 14, American Carbolite Company?

424 A. American Carbolite Plant is valued $175,000, but that is not properly speaking dock property, I wouldn't think.

Q. Well, it extends out to the dock line?

A. Yes.

Q. Makes a total of approximately how much?

A. Approximately $13,400,000.

Q. Is there much unimproved property that you have made no estimate of, have not been called for, between those properties?

A. Yes, sir.

Q. These are the only improved properties, between the Zenith Furnace Company property and Rice's Point, is that true?

A. The Scott-Graff Lumber Company has some improved property along the river there but I didn't make any estimate.

Q. These are the most important properties?

A. These are the most important ones.

Q. How long have these properties been—we will take out the Zenith Furnace Company's property and the Carnegie Coal Company's dock property, and how long have the balance of these improvements been there?

A. The Alger-Smith has been there 25 years. The Missabe ore-dock, a portion of it, has been there for 24 years. The Pittsburg Steamship Company dock has been there, I can't state exactly, 15 or 20 years; the Boston Coal-Dock for the period of about the same length of time; the Canadian Northern dock is comparatively a new improvement, two years. The Berwind about four years; the Island Creek a little older than the Berwind, about four years; not very much difference between those two; the Lesure Lumber Company has been there for 25 years; the American Carbolite was the

425 first improvement made in that portion of the city formerly known as West Duluth, thirty years.

Q. The Pittsburg Steamship Company dock and D. M. & N.?

A. Fifteen or twenty years from my memory.

Mr. Bailey: These marks that I have placed on there are correctly placed according to your valuations, were they?

The Witness. Yes.

Cross-examination.

By Mr. Gard:

Q. When did you say the improvements were made on the property just marked number 1 on this map?

A. The Zenith Furnace Company property has been built at different times. The first improvement there was made about thirty

years ago and the last about six years ago, if I remember correctly; six or eight years.

Q. What portion of it was improved recently?

A. Well, the dock has been extended at different times and improved, what you might call the southerly end of the dock.

Q. That is recent?

A. That is within the last ten years. I haven't exact figures of the time.

Q. The original improvement was back, was it——

A. The Furnace was built about thirty years ago.

Q. Where does the furnace stand?

A. The furnace stands out just south of where the Duluth and Superior short line, Northern Pacific Railroad, crosses the bay, between 58th and 55th Avenues West, in the City of Duluth.

Q. It was landward from this channel there that is marked
426 H on this map, wasn't it?

A. Yes, sir.

Q. Quite a distance landward?

A. It is on the land.

Q. And when was the improvement made to the southward of that channel marked H; that is, I mean out towards the river?

A. I can't tell exactly, but it was within the last ten years sometime. There has been many improvements made to the furnace from year to year and I can't tell.

Q. They built their furnace back on the land, then did they fill the water out?

A. There has been a great deal of fill there with slag and waste material.

Q. They filled it with slag and gradually crowded the water back with slag?

A. Yes, it has been filled in there. Grassy Point was practically on the level with the river but the bay has been gradually filled up.

Q. By slag from the furnace company?

A. Yes.

Q. And they have just been filling that out by dumping the slag there, gradually, have they?

A. Yes.

Q. Now, the number 2, what improvement is that?

A. That is the Chartier Mining Company's property there which is improved only with a filling, slag filling.

Q. When was it filled?

A. Oh, it has been a gradual fill there for quite a while but more particularly in the last six or eight years.

Q. Has the filling extended out beyond the channel marked H on this exhibit?

A. I would be unable to state that.

Q. You don't know how far it extends out?

427 A. I would be unable to state that.

Q. The property number 3, when was the improvement made on that?

A. Four years ago.

Q. That is the coal company?.

A. The Pittsburg & Lehigh.

Q. And how was that fill made out beyond that channel marked H and across it?

A. The dock is a sand filled dock with a concrete cribbing.

Q. When was that filled?

A. That was filled four years ago.

Q. They made a cribbing and then pumped sand in?

A. The sand was pumped in there and crib was built practically at the same time.

Q. Is there any other improvement than those you have mentioned, outside of this channel here marked H. You see it is marked H in red there and extends right around there?

A. Yes, I understand. I think there are no other improvements in the section referred to.

Q. That segment there, it is really a segment, isn't it? It is shaped segment-shaped?

A. Yes, sir.

Q. And there are no other improvements in that than those that you have just now mentioned in response to my question?

A. Not any of a permanent character, or of any character.

Q. Is there any other fill out there?

A. Well, there is no other fill there that I have taken any official notice of in fixing value. I don't know of any.

Q. Have you taken notice from time to time of this fill by the Zenith Furnace Company with slag out into the channel marked H and beyond it?

A. No, I wouldn't say that I have.

428 Q. You say that the fill has been how recent out beyond — in and beyond that channel?

A. I couldn't answer that question where that channel is there or the fill on either side of it.

Q. Can you answer it approximately; that is, can you answer approximately about when it was filled out to where that channel is marked on the map?

A. I don't think I could give you any evidence that would be of any value; I don't think I can.

Q. But you do know that it has been filled by slag from the Zenith Furnace Company across and out beyond that channel?

A. Well, the coal-dock comes in here (indicating).

Q. That is, comes in here, you mean, where that is marked number 1?

A. The slag as it now appears is on this section here between number 1 and what is marked as H there on the property of the Chartier Mining Company.

Q. Then you understand that it wasn't filled with slag on property marked number 1?

A. There is some fill there but I don't know how much, how much there is under the dock.

Q. And the dock was built there when, about?

A. It was built at different times, fifteen years, approximately.

Q. That is the outer portion?

A. No; the outer portion has been built during the last ten years; I can't say just exactly how long ago.

Q. Do you know when they built across that channel marked H?

A. I don't know.

Q. And have they filled that in there; have they, the dock company?

A. It is filled.

429 Q. It is filled, anyway.

A. (No answer).

The Commissioner: The proceeding is adjourned until the 7th of August, 1917, at 10 o'clock in the forenoon, at the Federal Building in the City of Superior, Wisconsin.

Mr. Fryberger: The understanding is that the State of Minnesota may put in such additional testimony at the same time as it sees fit, and the State of Wisconsin will proceed immediately with its case, if counsel for the state feels they are ready, and if not, they are to have such additional time as they shall request; is that it?

Attorney-General Owen: Yes.

Mr. Gard: And notice of taking of the Wisconsin testimony is waived.

Mr. Bailey: I want to offer Minnesota's Exhibit 30, being a plat from Frank's Atlas, an atlas published in the City of Duluth about the year 1902 and in common circulation and general use in the city.

It is stipulated that this is a plat or a leaf taken from C. P. Frank's real estate atlas of Duluth, Minnesota, copyrighted in 1902 and commonly used throughout the City of Duluth.

Mr. Gard: Objected to as incompetent and not properly qualified.

430 Received August 8, 1917. D. E. Roberts, Commissioner.

Federal Building, Superior, Wisconsin,
Tuesday, August 7, 1917, 10 A. M.

Pursuant to adjournment, the taking of testimony was resumed at the above time and place, before the Commissioner, Hon. David E. Roberts.

Present: The Commissioner, Hon. David E. Roberts; on behalf of the State of Minnesota, Hon. Lyndon A. Smith, Attorney General of the State of Minnesota; Mr. W. D. Bailey, Mr. H. B. Fryberger, and Mr. Louis Hanitch; and on behalf of the State of Wisconsin, Hon. Walter C. Owen, Attorney General of the State of Wisconsin, Mr. Horatio V. Gard, and Mr. Lyman T. Powell.

It was agreed that the hearings at this time should begin at ten A. M. and continue till 12:30 P. M., and from 2 P. M. until 4:30 P. M.

Thereupon the following testimony was introduced, and the following proceedings were had, to-wit:

JAMES M. KENNEDY, being duly sworn as a witness on behalf of the State of Minnesota, testified as follows:

Direct examination.

By Mr. Hanitch:

Q. Your full name, Mr. Kennedy?
A. James M. Kennedy.
Q. You reside where?
A. 2127 Ogden Avenue, Superior.
Q. How long have you lived in Superior?
A. Since January, 1915.
Q. You have been to Superior before, have you?
A. Yes, sir; I have been here every summer since 1901.
431 Q. What is your business now, Mr. Kennedy?
A. Assistant General Manager of the Land & River Company, Reorganized.
Q. How long have you held that position?
A. Since June, 1916.
Q. You have charge and custody of their books and papers and files?
A. Yes, sir.
Q. What is the Land & River Company, Reorganized?
A. It is the original Townsite Company of the city.
Q. Of West Superior?
A. Of West Superior.
Q. And do they have large real-estate holdings?
A. Yes, sir.
Q. They are a real-estate corporation, are they not?
A. Yes, sir.
Q. And platted originally all of the townsite of West Superior, did they?
A. Practically all of it; yes, sir.

(A map produced by the witness was marked Minnesota Exhibit 31.)

Q. Showing you Minnesota Exhibit 31, I ask you what that is.
A. It is a map of the City of Superior and surroundings.
Q. Have you had possession of that map?
A. Yes, sir.
Q. For whom?
A. For the Land & River Company.
Q. Is that one of their files or maps?
A. Yes, sir.
Q. State how long you have known of this being in the possession of the Land & River Improvement Company, or its predecessor; about how long?
A. I should say at least ten years.
Q. Where have they had it, generally, in their office?

A. It was hung on the wall till last spring—a year ago last spring.

Q. And was it used as a map showing the general location of the waters and lands at the head of the lake?

A. Yes, sir; I should say so.

432 Mr. Hanitch: We offer in evidence Minnesota Exhibit 31.

Attorney-General Owen: I want to ask him a question or two.

Examined by Mr. Owen:

Q. You never saw any other map like this, did you?

A. No, sir.

Q. This is a map that the Land & River Company has had hanging in its office?

A. Yes.

Q. For the particular use of the Land & River Company?

A. I suppose so; yes, sir.

Q. And it is not a map published for general circulation?

A. That I do not know.

Q. If it is, you do not know it?

A. No, sir.

Q. And you say you have known of the existence of this map for a period of only ten years?

A. That is all; yes, sir.

Q. The particular use made of this map by the Land & River Improvement Company was to show the relative position of real-estate under its ownership?

A. No, it was never used for the company's own properties, as a map. It was more of a reference map, a map that would show the whole city and the surroundings.

Q. The various lots and blocks and streets?

A. Yes, the whole property I should say.

Q. The Land & River Company has not been particularly interested in the exact location of the boundary line through these waters, has it?

A. Well, they might have been when they first got the map.

Q. Well, not since you have been connected with them?

A. No, sir.

Attorney-General Owen: We object to the map as incompetent, irrelevant and immaterial, and on the further ground
433 that it has not been properly authenticated.

The Commissioner: The map will be received of course, subject to the objection. But permit me to make this remark, gentlemen: I was obliged to go through this record to get the exhibits in shape. They seem to be divided into three classes: first, official maps, which are undoubtedly proper; second, ancient maps, over thirty years old, shown to be in common use, which unquestionably are admissible; third, a series of commercial maps. Whether they are strictly admissible might be debatable in some

instances. I suppose the rule is that a map of this character, to be strictly admissible, would have to be proved to be in common use. I just make that suggestion for what it is worth. Whether the question can be raised, I do not know; it is immaterial to me.

Mr. Hanitch: This company having laid out the entire townsite of West Superior and having used this map, it seems to me that it was about as much in use as a map could be, with reference to the City of Superior and the waters surrounding it.

The Commissioner: It may be that is true; of course I do not pass on that; I just throw that suggestion out for what it is worth.

Q. State whether you know that this map had been in possession of the Land Company for a long time before you saw it in their office.

A. Well, what do you mean, Mr. Hanitch? It was there before I saw it?

434 Q. Yes; that is, from your general information about the affairs of the company, state whether or not the map has been in their possession for a great many years more than the ten years that you say you have had knowledge of it.

A. How much prior to that I could not say, Mr. Hanitch. I know it must have been there before I saw it, because it was there when I first saw it. How much longer than that I do not exactly know.

Q. The first time you saw a copy of this, as I understand you, or as I understood you this morning before coming upon the stand, was when the Land Company had its offices in the Board of Trade Building?

A. Yes, on the second floor of the Board of Trade.

Q. How long ago was that?

A. That must have been fifteen or sixteen or seventeen years ago, I should say; I do not just remember. When I first came up here.

Q. At least fifteen years ago?

A. Yes.

Q. And state whether or not you know that more than just one of these maps has been published and issued and used in this vicinity.

A. Well, that I don't know, Mr. Hanitch.

The Commissioner: Who made the map, do you know, Mr. Kennedy?

Witness: I think some firm in Minneapolis printed the map.

Mr. Fryberger: It is stamped right on the map itself.

Mr. Hanitch: It is stamped on the map.

The Commissioner: The map may be received subject to the objection.

435 Cross-examination.

By Mr. Owen:

Q. Mr. Kennedy, I think you testified that the Land & River Company, or its predecessor, was the proprietor of the original townsite.

A. Yes, sir.

Q. What townsite do you mean?

A. West Superior.

Q. You did not mean the original townsite of Superior?

A. No, sir; West Superior.

Q. When was that platted, do you know?

A. Various plats; I do not know how long back; in the 80's.

Q. Well, it was a good many years after the original townsite of Superior was platted, was it not?

A. The plats of the city?

Q. The original town plat of Superior as distinguished from the townsite of West Superior.

A. Well, the town of Superior, as I understand it, was in existence before the town of West Superior.

Q. Yes, a great many years.

A. I think so.

Q. How many years, according to your understanding?

A. Well, I understand there was a settlement at East End, what we call the East End now, the old town of Superior, around the time of the Civil War or prior.

Q. When was the townsite of West Superior platted?

A. I do not know; I think it was about 1880.

Examined by Mr. Hanitch:

Q. Mr. Kennedy, looking at Minnesota Exhibit 31, about what part of what is now the City of Superior was covered by the townsite of West Superior?

436 The Commissioner: Does the map show that?

Witness: I do not know, your Honor. (After examining the map Exhibit 31.) I should say it was practically everything west of the line here.

The Commissioner: You will have to call off some points, to make it intelligible on the record.

Q. Hill Avenue?

A. I should say west of Hill Avenue.

(The witness was excused.)

H. C. FULTON, being duly sworn as a witness on behalf of the State of Minnesota, testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Your name is H. C. Fulton?
A. Yes, sir.
Q. You reside in the City of Duluth?
A. Yes, sir.
Q. And have for fifteen or eighteen years?
A. Twenty years.
Q. You are a practicing attorney?
A. Yes, sir.
Q. At the bar of St. Louis County, Minnesota?
A. Yes, sir.
Q. And you have represented the Pittsburgh & Lehigh Dock Company and the Chartiers Mining Company?
A. I believe the Carnegie Coal Company too.
Q. The Carnegie Coal Company also?
A. Yes, sir—the Carnegie Dock and Fuel Company.
Q. Mr. Fulton, representing these different companies, and within the past few years, have you paid personal and real property taxes for these companies, both in Douglas
437 County, Wisconsin, and St. Louis County, Minnesota?
A. I paid the real-property taxes in Douglas County for the years 1913, 1914, 1915 and 1916, and in St. Louis County, Minnesota, for the same years, and paid the real-estate taxes for Douglas County for the year 1913.
Q. 1913?
A. Yes, payable in 1914.
Q. Well, did I understand you to say that you paid the personal property, first?
A. Yes, the personal property, for those four years in both states.
Q. In both states?
A. Yes.
Q. What did the personal property consist of, that you paid the taxes on, chiefly?
A. As I understand, chiefly coal on the docks.
Q. What was the real property? What was the description?
A. It is given here in the tax receipts, those that we paid in Wisconsin; it is described by metes and bounds.

Mr. Fryberger: Now, gentlemen, we have the original tax receipts, showing, I think, that all of those taxes were paid under protest in Wisconsin. We do not like to have them go in the record. We produce them, and we would like to make an arrangement with you to have copies made by the reporter and let us withdraw the originals. We have them here and we produce them. There will be no objection to that, will there?

Attorney-General Owen: No.

Mr. Fryberger: Then, Mr. Reporter, how would you like to mark them?

438 The Commissioner: Have them marked as exhibits.

Mr. Fryberger: Perhaps, gentlemen, if you will look them over, we can, merely by a statement, cover the whole situation.

Attorney-General Owen: Yes, we will look them over.

Mr. Fryberger: Yes, please do look them over, and perhaps we can cover the whole situation.

Attorney-General Owens: Are these all Wisconsin receipts? (Referring to receipts produced by the witness.)

Witness: They are all Wisconsin, yes.

Attorney-General Owen: My suggestion would be this, Mr. Fryberger—and this is what I thought of doing with some of our exhibits—have a copy made and let the witness testify that the copy which he holds in his hand is a true copy of the original, and make the statement that he does not like to leave the original but will leave the sworn copy, and mark the copy as the exhibit and let that be the evidence.

Mr. Fryberger: That will be entirely satisfactory, but of course we would not have time now before we close our case (we expect to close our case in a very few minutes) to make copies of these, but I presume it will be satisfactory, if you want a copy in the record, to have the reporter make the copy, and make a statement that they are accurate copies.

Attorney-General Owen: Yes, that is all right.

(Tax receipts produced by the witness were marked
439 Minnesota Exhibits 32, 33, 34, 35 and 36, respectively.)

The Commissioner: Now what is your agreement, gentlemen?

Mr. Fryberger: Let me offer the exhibits. The agreement is, as I understand it, that we offer these exhibits in evidence, Exhibits 32 to 36, both inclusive (and there are additional exhibits also), with the understanding that the reporter is to make copies of these exhibits, which copies are to be substituted for the originals and the originals returned to us for our files.

The Commissioner: Is that agreeable?

Attorney-General Owen: Yes.

The Commissioner: It is so stipulated.

Mr. Fryberger: Now we offer in evidence, under that understanding, Minnesota Exhibits 32 to 36, both inclusive.

The Commissioner: Any objection, Mr. Owen?

Attorney-General Owen: I object to them as incompetent, irrelevant and immaterial.

The Commissioner: The exhibits are received subject to the objection made.

Minnesota Exhibits 32, 33, 34, 35, and 36, are in the words and figures following, to-wit:

440

MINNESOTA EXHIBIT 32

Personal Tax Receipt, 1916 No. 2062 F.

STATE OF WISCONSIN,
Douglas County:

CITY OF SUPERIOR, WIS., Jan. 30, 1917.

Received of Carnegie Dock and Fuel Co. Two Thousand Seventy one 96/100 Dollars in full payment of all Personal Taxes charged on Tax Roll of above city for the year 1916.

Personal tax.	Valuation.	General tax.	Sewer dist. No.	Total taxes.
9 Ward	75000	2071.96		2071.96

G. W. KANE,
City Treasurer.

Stamped: "Paid under Protest."

MINNESOTA EXHIBIT 33

Personal Tax Receipt, 1914. No. 1710 F.

STATE OF WISCONSIN,
Douglas County:

CITY OF SUPERIOR, WIS., Jan. 30, 1915.

$1875.25.

Received of Carnegie Dock & Fuel Co. Eighteen Hundred Seventy Two 25/100 Dollars, in full payment of all Personal Taxes charged on Tax Roll of above City for the year 1914.

Personal tax.	Valuation.	General tax.	Sewer dist. No. 6.	Total taxes.
9 Ward	65000	1550.25	325.00	1875.25

G. W. KANE,
County Treasurer.

Stamped: "Paid under Protest"

441

MINNESOTA EXHIBIT 34

Personal Tax Receipt, 1915 No. 1305 F.

STATE OF WISCONSIN,
Douglas County:

CITY OF SUPERIOR, WIS., 1/31, 1916.

$1818.80.

Received of Carnegie Dock & Fuel Co. Eighteen hundred eighteen and 80/100 Dollars, in full payment of all Personal Taxes charged on Tax Roll of above city for the year 1915.

Personal tax.	Valuation.	General tax.	Sewer dist. No.	Total taxes.
9 Ward	75000	1818.80		18.80

G. W. KANE,
City Treasurer.

Paid under Protest.

MINNESOTA EXHIBIT 35

$1116.13 No. A352

County Treasurer's Office

Superior, Douglas County, Wisconsin.

Received of Carnegie Dock & Fuel Co. this 25th day of May, 1914, the sum of Eleven hundred Sixteen 13/100 Dollars in full for Taxes, Interest and Charges for the year 1913, on the following described Real Estate in the City of Superior, Douglas County, State of Wisconsin, as returned to this office by the Treasurer of the City of Superior, in said County:

Description.	Sec.	Town range.	Lot.	Block.	Total tax.
Personal Property Tax, 9th Ward					1073.20

Paid under protest

Total tax	1073.20
Interest	42.93
Advertising	
Total	1116.13

F. J. KENYON,
County Treasurer,
By ——, Deputy.

Examine carefully and report errors at once.
442 Written on side of receipt: "Countersigned: W. J. Leader, A. K. Cole, D'p'ty County Clerk."

MINNESOTA EXHIBIT 36

$3713.65 *Redemption Receipt* No. 222 B

STATE OF WISCONSIN,
County of Douglas:

Treasurer's Office, Superior, Wis., 3/5, 1917.

Received of Carnegie Dock and Fuel Co. by Fryberger, Fulton & Spear, Duluth, Minn., the sum of Thirty seven hundred thirteen Dollars and sixty five cents, in full for redemption from Tax Sale

of May, 1914, for the Taxes of 1913, on the following described Lands, to wit:

No. of certificate.	Description.
3917	Carnegie Dock & Fuel Co., That part of land and land under water commencing at a point on a line of sec. 16, tp 49, r 14, in the City of Superior, Douglas Co., Wis., and distant 121 ft n of c¼ corner of said sec. thence n 89° 40′ W, for a distance of 10249.8 ft., thence s 0° 10′ w for a distance of 2221 ft more or less to the center of the original channel of the St. Louis river which is the place of beginning, thence s 0° 10′ to the established dock line on nly side of the dredged channel of the St. Louis river, thence wly along said dock line 1180 ft more or less to a right line production of the line between the property of the Carnegie Dock & Fuel Co., and the Zenith Furnace Co., thence n 0° 10′ e and following said right line production for a distance of 1650 ft. more or less to the center of the original channel of the St. Louis river, thence ely and following said original channel to place of beginning containing 38 acres more or less, all of the above bearings are from the true meridian.

443

Lot. sec.	Block town.	Range.	Tax.	Interest.	Fees.	Advertising.	Total.
			2615.15	1098.00	50		3713.65

Paid under protest under the claim that his property lies within the State of Minnesota and is not taxable in Wisconsin; and in case the U. S. Supreme Court in the action therein pending between the State of Minnesota and the State of Wisconsin and involving this property, should decide that this property is in Wisconsin, then and in that case this payment is made by the Carnegie Dock and Fuel Co. as occupant of the property above described.

Countersigned:

W. J. LEADER, *County Clerk.* HENRY BEGLINGER, *County Treasurer.*

(Another tax receipt was marked Minn. Ex. 37, consisting of four sheets.)

The Commissioner: Do you make the same stipulation with respect to the Minnesota receipts?

Mr. Fryberger: Yes; as soon as the reporter gets them marked we will put it on the record.

(Other tax receipts were marked Minnesota Exhibits 38, 39, and 40.)

Mr. Fryberger: I offer in evidence Minnesota Exhibit 37, consisting of four sheets, Minnesota Exhibit 38, consisting of three

sheets, and Minnesota Exhibit 39, consisting of two sheets,
444 also Minnesota Exhibit 40 consisting of two sheets, with the understanding the reporter is to make copies of these exhibits, and the originals are to be withdrawn. Is it so understood?

Attorney-General Owen: It is so understood.

The Commissioner: It is so stipulated, and it will be so done.

Attorney-General Owen: The exhibits are objected to as incompetent, irrelevant and immaterial.

The Commissioner: The exhibits are received subject to the objection made.

Minnesota Exhibits 37, 38, 39 and 40 are in the words and figures following, to-wit:

MINNESOTA EXHIBIT 37

Receipt No. 5973

Statement of Personal Property Taxes for the Year of 1913.
St. Louis County, Minn.

DULUTH, MINN., Jan. 5, 1914.

Carnegie Dock & Fuel Co. "Retail."
2 Lyceum Bldg.
Duluth, Minn:

This Bill must be paid before March 1st, 1914, to avoid penalty.

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
1	63	15	City of Duluth	Ind.	3233	117.36

Your Personal Property Tax for 1913 amounts to the sum indicated above. It is now due and in the hands of the County
445 Treasurer for Collection.

On March 1st, 1914, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 15, 1914, the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the Tax and Costs by distress and sale.

Please return this notice when you pay.

Make all remittances payable to G. H. Vivian, County Treasurer.

Do not detach sheets.

Return both when you pay.

Paid Feb. 16, 1914.

G. H. VIVIAN,
County Treasurer.

By W. R. POND, *Deputy.*

Checked Feb. 16, 1914.
J. G. N. Cashier.

Printed on side: "If you will return this Statement when you pay it will save both you and us considerable time."

446

Receipt No. 5974

Statement of Personal Property Taxes for the Year of 1913
St. Louis County, Minn.

DULUTH, MINN., Jan. 5, 1914.

Carnegie Dock & Fuel Co. "Wholesale"
No. 2 Lyceum Bldg., Duluth, Minn.

This Bill must be paid before March 1st, 1914, to Avoid Penalty

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
1	63	15	City of Duluth	Ind.	116000	4210.80

Your Personal Property Tax for 1913 amounts to the sum indicated above. It is now due and in the hands of the County Treasurer for Collection.

On March 1st, 1914, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 15, 1914, the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the Tax and Costs by distress and sale.

Please return this notice when you pay.

Make all remittances payable to G. H. Vivian, County Treasurer.

Paid Feb. 16, 1914.

G. H. VIVIAN,
County Treasurer
W. R. POND,
Deputy.

Checked J. G. N. Cashier.
Feb. 16, 1914.
Do not detach sheets.
Return both when you pay.
Printed on side: "If you will return this statement when you pay it will save both you and us considerable time."

447

Receipt No. 5975

Statement of Personal Property Taxes for the Year of 1913
St. Louis County, Minn.

DULUTH, MINN., Jan. 5, 1914.

Pittsburgh & Lehigh Dock Co.,
2 Lyceum Bldg., Duluth, Minn.

This bill must be paid before March 1st, 1914, to avoid penalty.

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
3	93	1	City of Duluth	Ind.	85000	3085.50

Your Personal Property Tax for 1913 amounts to the sum indicated above. It is now due and in the hands of the County Treasurer for Collection.

On March 1st, 1914, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 15, 1914, the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the tax and costs by distress and sale.

Please return this notice when you pay.

Make all remittances payable to G. H. Vivian, County Treasurer.

Do not detach sheets.

Return both when you pay.

Paid Feb. 16, 1914.

G. H. VIVIAN,
County Treasurer.
By R. W. POND,
Deputy.

Checked Feb. 16, 1914.
J. J. N. Cashier.

Printed on side: "If you will return this statement when you pay it will save both you and us considerable time."

448 Receipt No. 5976

Statement of Personal Property Taxes for the Year of 1913
St. Louis County, Minn.

DULUTH, MINN., Jan. 5, 1914.

J. H. Sanford, Pittsburgh, Pa.

This bill must be paid before March 1st, 1914, to avoid penalty.

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
4	3	4	City of Duluth	Ind.	150	5.44

Your Personal Property Tax for 1913 amounts to the sum indicated above. It is now due and in the hands of the County Treasurer for collection.

On March 1st, 1914, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 15, 1914, the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the tax and costs by distress and sale.

Please return this notice when you pay.

Make all remittances payable to G. H. Vivian, County Treasurer

Do not detach sheets.
Return both when you pay.

Paid Feb. 16, 1914.

G. H. VIVIAN,
County Treasurer.
By R. W. POND,
Deputy.

Checked J. J. N. Feb. 16, 1914.

Printed on side: "If you will return this statement when you pay it will save both you and us considerable time."

449 MINNESOTA EXHIBIT 38

Receipt No. 9875

Statement of Personal Property Taxes for the Year of 1914.
St. Louis County, Minn.

DULUTH, MINN., Jan. 4, 1915.

Carnegie Dock and Fuel Co. Wholesale
2 Lyceum Bldg., Duluth, Minn.

This bill must be paid before March 1st, 1915, to avoid penalty.

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
1	63	16	City of Duluth	Ind.	191435	6681.08

"Personal" coal stocks.
Stamp: "Paid under Protest"
Your Personal Property Tax for 1914 amounts to the sum indicated above. It is now due and in the hands of the County Treasurere for collection.

On March 1st, 1915, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 15, 1915, the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the tax and costs by distress and sale.

Please return this notice when you pay.
Make all remittances payable to G. H. Vivian, County Treasurer.
Do not detach sheets.
Return both when you pay.

Paid Feb. 26, 1915.

G. H. VIVIAN,
County Treasurer.
By A. C. NELSON,
Deputy.

Checked—Cashier.

Printed on side: If you will return this statement when you pay it will save both you and us considerable time.

450 Receipt No. 9876

Statement of Personal Property Taxes for the Year of 191
St. Louis County, Minn.

DULUTH, MINN., Jan. 4, 1915.

Pittsburgh & Lehigh Dock Co.
Lyceum Bldg., Duluth, Minn.

This bill must be paid before March 1st, 1915, to avoid penalty

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
3	92	3	City of Duluth	Ind.	165150	5763.7

"Personal" O. K. charge to improvements.
Paid under Protest.
Your Personal Property Tax for 1914 amounts to the sum in dicated above. It is now due and in the hands of the County Treas urer for collection.
On March 1st, 1915, a penalty of ten (10) per cent will be adde to this amount unless the tax is paid prior to that date. On or abou April 15, 1915, the tax still remaining unpaid will be placed i the hands of the Sheriff, who will proceed to collect the tax an costs by distress and sale.
Please return this notice when you pay.
Make all remittances payable to G. H. Vivian, County Treasurer
Do not detach sheets.
Return both when you Pay.

Paid Feb. 26, 1915.

G. H. VIVIAN,
County Treasurer.
By A. C. NELSON,
Deputy.

Checked J. T. N., Cashier.
Feb. 26, 1915.

Printed on side: "If you will return this statement when you pay it will save both you and us considerable time."

451

MINNESOTA EXHIBIT 39

Receipt No. 10049

		Tax rate. *Mills.*
State	Taxes	3.65
County	"	4.50
School	"	11.86
City	"	17.29
Total		37.30

Statement of Personal Property Taxes for the Year 19—. St. Louis County, Minn.

DULUTH, MINN., Jan. 2nd, 1917.

Pittsburgh & Lehigh Dock Co.
Lyceum Bldg., Duluth, Minn.

This bill must be paid before March 1st, 1917, to avoid penalty.

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
3	103	8	City of Duluth	Ind.	185198	6907.89

(In ink): Paid under Protest
(Stamp): Paid under Protest

Your Personal Property Tax for 1916 amounts to the sum indicated above. It is now due and in the hands of the County Treasurer for collection.

On March 1st, 1917, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 16, 1917, the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the tax and costs by distress and sale.

Please return this notice when you pay.
Make all remittances payable to G. H. Vivian, County Treasurer.
Do not detach sheets.
Return both when you pay.

Paid Feb. 27, 1917.

G. H. VIVIAN,
County Treasurer.
By W. J. HARKEN,
Deputy.

Checked G. M. V. Feb. 27, 1917.

Printed on side: "If you will return this statement when you pay it will save both you and us considerable time."

452 Receipt No. 10,050.

		Tax rate. *Mills.*
State	Taxes.....	3.65
County	"	4.50
School	"	11.86
City	"	17.29
Total		37.30

Statement of Personal Property Taxes for Year of 1916, *St. L County, Minn.*

DULUTH, MINN., Jan. 2nd, 1917

Carnegie Fuel Co., Wholesale, #2 Lyceum Bldg., Duluth Min

This bill must be paid before March 1st, 1917, to avoid pena

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Ta
1	69	2	City of Duluth	Ind.	127,000	4,737

(In ink): Paid under Protest.
(Stamp): Paid under Protest.

Your Personal Property Tax for 1916 amounts to the sum i cated above. It is now due and in the hands of the County Treasu for Collection.

On March 1st, 1917, a penalty of ten (10) per cent will be ad to this amount unless the tax is paid prior to that date. On or ab April 16, 1917, the tax still remaining unpaid will be placed in hands of the Sheriff, who will proceed to collect the Tax and C by distress and sale.

Please return this notice when you pay.

Paid Feb. 27, 1917.

G. H. VIVIAN,
County Treasurer
By W. J. HARKINS,
Deputy

Checked G. M. V., Cashier, Feb. 27, 1917.

Make all remittances payable to G. H. Vivian, County Treasu
Do not detach sheets.
Return both when you pay.

(Printed on side): "If you will return this statement when y pay it will save both you and us considerable time."

453

MINNESOTA EXHIBIT 40.

Receipt No. 9,807.

		Tax rate. *Mills.*
State	Taxes.....	4.10
County	"	5.25
School	"	13.31
City	"	16.04
Total		38.70

Statement of Personal Property Taxes for the Year of 1915, *St. Louis County, Minn.*

DULUTH, MINN., Jan. 3, 1916.

Pittsburg & Lehigh Dock Co., Lyceum Bldg., Duluth, Minn.:

This bill must be paid before March 1st, 1916, to avoid penalty.

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
3	95	4	City of Duluth	Ind.	165,180	6,392.47

Paid under Protest.

Your Personal Property Tax for 1915 amounts to the sum indicated above. It is now due and in the hands of the County Treasurer for Collection.

On March 1st, 1916, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 15, 1916, the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the Tax and Costs by distress and sale.

Please return this notice when you pay.

Paid Feb. 28, 1916.

G. H. VIVIAN,
County Treasurer.
By R. W. POND,
Deputy.

Checked G. M. V., Cashier.

Make all remittances payable to G. H. Vivian, County Treasurer.
Do not detach sheets.
Return both when you pay.

(Printed on side): "If you will return this statement when you pay it will save both you and us considerable time."

454 Receipt No. 9,808.

		Tax rate. *Mills.*
State	Taxes.....	4.10
County	"	5.25
School	"	13.31
City	"	16.04
Total		38.70

Statement of Personal Property Taxes for the Year of 1915, *St. Louis County, Minn.*

DULUTH, MINN., Jan. 3, 1916.

Carnegie Fuel Co., (Wholesale), #2 Lyceum Bldg., Duluth, Minn.

Paid under Protest.
This bill must be paid before March 1st, 1916, to avoid penalty

Book.	Page.	Line.	City, village or town.	School district.	Valuation.	Tax.
1	65	17	City of Duluth	Ind.	308,882	11,953.7

Your Personal Property Taxes for 1915 amounts to the sum indicated above. It is now due and in the hands of the County Treasurer for Collection.

On March 1st, 1916, a penalty of ten (10) per cent will be added to this amount unless the tax is paid prior to that date. On or about April 15, 1916. the tax still remaining unpaid will be placed in the hands of the Sheriff, who will proceed to collect the Tax and Costs by distress and sale.

Please return this notice when you pay.
Make all remittances payable to G. H. Vivian, County Treasurer.
Do not detach sheets.
Return both when you pay.

Paid Feb. 28, 1916.

G. H. VIVIAN,
County Treasurer.
By R. W. POND,
Deputy.

Checked G. M. V., Cashier, Feb. 28, 1916.

(Printed on side): "If you will return this statement when you pay it will save both you and us considerable time."

455 Q. Now, Mr. Fulton, state in a general way what property is taxed, that paid the double tax under the protest arrangement as appears by these exhibits.

A. The St. Louis County covered the entire property and the Douglas County receipts covered the part that is in dispute.

Q. Mr. Fulton, in the pleadings in this case mention is made of the number of suits that have been started and are now pending between owners of property in Wisconsin and Minnesota, conflicting claims. Have you been connected with that litigation, more or less of it?

A. Yes, sir.

Mr. Fryberger: I presume like enough we can stipulate to all of those. I will have him state in a general way.

Attorney-General Owen: We will stipulate.

Q. Just state what suits are pending.

A. In the District Court of St. Louis County, Minnesota, there was the case of the Pittsburgh & Lehigh Dock Company versus the Norton Estate or the executors—I have forgotten just who represents them, and also the case of the Chartiers Mining Company against the same defendant, and in the courts of Wisconsin there was the case of the Norton Estate, or the executors, against the Pittsburgh & Lehigh Dock Company and Chartiers; I think that was all in one suit, but whether it is one or two suits I am not quite sure; and I think there is another action brought against property represented by Mr. Bailey; I am not sure as to that; we had the pleadings only.

Q. Now, what property is involved in those lawsuits, in a general way, with reference to these descriptions in these exhibits, these tax receipts, which have been offered in evidence this
456 morning?

A. I don't quite understand you.

Q. What I am trying to get at is whether or not it is the same property involved in these lawsuits as is covered by these tax receipts we have offered.

A. It is part of the dock property that is in dispute between the State of Wisconsin and the State of Minnesota.

Mr. Bailey: I presume it will be stipulated that there is a suit now pending in the United States court for the western district of Wisconsin, brought by George W. Norton and others, as executors, against the Zenith Furnace Company, and involving the title to the property just at the southwesterly end of the Zenith Furnace Company's property, claimed to be in these waters about which we are litigating?

Attorney-General Owen: Yes, we stipulate that.

Mr. Bailey: It being claimed by the Nortons in that suit that the property is in Wisconsin, and by the defendant Zenith Furnace Company that it is in Minnesota.

Q. In reference to that suit that was started in the Wisconsin State court by the Nortons against the Pittsburgh & Lehigh Dock

Company and the Chartiers Mining Company, is that still pending in that court?

A. It has been removed to the Federal Court.

Q. In and for the district of Wisconsin. I think that is all.

Cross-examination.

By Attorney-General Owen:

Q. You say you paid these taxes for the Carnegie Dock Company?

A. Yes, sir.

Q. In both the State of Wisconsin and the State of Minnesota?

457 A. In both states; yes, sir.

Q. And you protested the payment of them in the State of Minnesota as well as in the State of Wisconsin?

A. I presume that we did.

Q. What?

A. I presume that we did, yes. The receipts would show. I think we protested them there too.

Q. Well, that is true, isn't it?

A. If it so shows; that would be my recollection, that we protested them there. We were not absolutely certain we were in Minnesota of course.

Q. Are you familiar with the physical property of the Carnegie Dock Company in the Superior Bay?

A. Well, in rather a general way.

Q. What?

A. In rather a general way.

Q. You are not very familiar with it, then?

A. Not enough to mark out just where the disputed lines actually did go through, within a few feet.

Attorney-General Owen: That is all.

By Mr. Fryberger:

Q. I just want to ask one more question. Mr. Fulton, prior to the time that these taxes were paid in the State of Wisconsin, these personal property taxes on the coal that you testified to, what were the threats, if any, that were made about selling the personal property if these taxes were not paid on both sides?

A. I understood that the property would be sold according to their law if we did not pay them.

Q. Were there threats of that kind made?

A. Yes.

458 Q. As you understood it?

A. Yes.

Q. According to the Wisconsin law?

A. According to the Wisconsin law, yes.

Mr. Fryberger: I think that is all.

GEORGE W. KANE, being duly sworn as a witness on behalf of the State of Minnesota, testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Kane, you are the city treasurer of the City of Superior, Wisconsin?

A. Yes, sir.

Q. Have been for how long?

A. About eight years.

(Papers marked Minnesota Exhibits 41, 42 and 43, respectively.)

Q. As such treasurer you have charge of the collection of taxes levied in the City of Superior, do you?

A. Yes, sir.

Q. Showing you Minnesota Exhibit 41, consisting of two sheets, I will ask you if the first sheet is a "Personal and Income Tax Notice," issued in the usual course of business by the Chief of Police of the city and directed to the Zenith Furnace Company, in reference to personal property taxes for the year 1913?

A. Yes, sir.

Q. And if the second sheet attached is a receipt issued by the Chief of Police for those taxes to the Zenith Furnace Company?

A. Yes, sir.

Q. In the course of business, in the administration of the
459 city affairs, does the Chief of Police at times collect taxes?

A. He collects taxes after they go delinquent.

Q. But if they are paid before they are delinquent, they are paid to you?

A. Paid direct to me; yes, sir.

Q. Do you know this to be the signature of Mr. McKinnon, who was Chief of Police at the time?

A. I do; yes, sir.

Q. Calling your attention to paper marked Minnesota Exhibit 42, I will ask you if that is a receipt issued by you to the Zenith Furnace Company?

A. Yes, sir.

Q. About the time it bears date?

A. Yes, sir.

Q. And if you collected the amount shown by the receipt?

A. I did.

Q. And those taxes were paid under protest, were they, by the Zenith Furnace Company?

A. The receipt is so marked, and I think they were paid under protest. The receipt is stamped "Paid under Protest."

Q. And calling your attention to Minnesota Exhibit 43, consisting of three sheets, I will ask you if the first sheet is a receipt for the taxes of the year 1916, issued to the Zenith Furnace Company by you as city treasurer?

A. Yes, sir.

Q. And if the second sheet is a copy of the voucher accompanying the payment?

A. The copy of the voucher, did you say?

Q. Accompanying the payment.

A. Why, yes; I think so.

Q. And if the third sheet is a notice issued by you for the amount of those taxes, to the Zenith Furnace Company.

A. Yes, sir.

Q. Now, were the taxes represented by these three receipts
460 taxes for the personal property of the Zenith Furnace Company northerly of the dredged canal in the waters between Wisconsin and Minnesota?

A. It is the personal property tax on the Carnegie Company.

Q. No, it is the Zenith Furnace Company.

A. Or the Zenith Furnace Company; that is across the other side of the bay; I don't know just exactly the location.

Q. Well, they are taxes for personal property of this company located at a point that is in dispute between the States of Wisconsin and Minnesota, are they not?

A. Yes, that is the property.

Q. Where the right to tax is claimed both by the State of Minnesota and the State of Wisconsin?

A. Yes, sir.

Mr. Bailey: I will offer these in evidence. I would like to have it understood, the same as it was before, that copies may be made and the originals withdrawn.

Attorney-General Owen: We simply object to them as incompetent, irrelevant and immaterial, but agree that copies may be substituted for the originals.

The Commissioner: What are the numbers?

Mr. Bailey: Minnesota Exhibits 41, two sheets, 42, one sheet, 43, three sheets.

The Commissioner: Minnesota Exhibits 41, 42 and 43 may be copied by the reporter into the record, and after that is done the exhibits themselves may be withdrawn. They are received in evidence subject to the objection.

Mr. Bailey: I think that is all, Mr. Kane.

461 The Commissioner: The originals may be returned to counsel for the State of Minnesota.

Minnesota Exhibits 41, 42 and 43 are in the words and figures following, to-wit:

MINNESOTA EXHIBIT 41.

(Postal Card.)

(On front side): Geo. W. Kane, Treasurer.

Superior Feb. 13, '14. 8:30 A. M. Wis.

U. S. Postal 1 Card 1 One Cent McKinley.

This side of card is for address only.

Zenith Furnace Co.,
West Duluth,
Minn.

(On reverse side):

Personal and Income Tax Notice.

SUPERIOR, WIS., 2/12/14.

Your tax for the year 1913, in the 9 Ward of the City of Superior, is as follows:

Income tax .....
Personal tax $191.57
Total to pay .....

This tax is past due, if paid at once you will avoid additional cost.

V. McKINNON,
Chief of Police.

Bring this card when you pay.

(Stamped): Answered
Zenith Furnace Co.
Received
A. M. Feb. 13, 1914. P. M.

462

Personal Tax Receipt.

City Hall, Superior, Wis.

No. 923.

SUPERIOR, WIS., Feb. 17th, 1914.

Received Zenith Furnace Co. One Hundred Ninety One and 57/100 Dollars. Personal Tax in the 9 Ward for 1913. $191.57.

V. McKINNON,
Chief of Police,
By —— ——.

Paid under Protest.

MINNESOTA EXHIBIT 42.

Personal Tax Receipt, 1915. *No. 79 F.*

STATE OF WISCONSIN,
Douglas County:

CITY OF SUPERIOR, WIS., Dec. 21, 1915.

$848.75.

Received of Zenith Furnace Co. W. Duluth, Eight Hundred Forty-Eight 75/100 Dollars, in full payment of all Personal Taxes charged on Tax Roll of above city for the year 1915.

Personal tax.	Valuation.	General tax.	Sewer dist. No.	Total taxes.
9 Ward	35,000	84,875	.....	848.75

Paid under Protest.

G. W. KANE,
Treasurer.

(Written in pencil): 20139.
(Stamped on face): -est Reckitt & Co.
Produce——

(Stamped on back): Answered Zenith Furnace Co.
A. M. Received Dec. 23, 1915. P. M.

463 MINNESOTA EXHIBIT 43.

(Postal Card.)

(On front): Superior
Dec. 21, '16
11- P. M.
Wis.

U. S. Postal
Card
One Cent

This side of card for address.

Zenith Furnace Co.
W. Duluth,
Minn.

(On reverse side):

Tax Notice.

SUPERIOR, WIS., Dec. 16, 1916.

You are taxed in the 9 Ward of the City of Superior, as follows:

		50,000.00*
		27.63*
Per	1,381.30	
Sewer Dist.		
Income		
Offsets		
Total, tax to pay		1,381.30

[*In pencil in copy.]

This Tax is now due and should be paid before January 31st, 1917, or the same will be subject to collection by distress and sale together with the penalty thereon as required by Section 1081, R. S.

G. W. KANE,
City Treasurer.

Bring this card when you pay.

(Stamped): Answered Zenith Furnace Co.
A. M. Received Dec. 22, 1916. P. M.

464

Zenith Furnace Company.

Auditor's Voucher.

Auditor: Pay to G. W. Kane, City Treas., Superior, Wisc.
In payment of items as detailed below:—January 9th, 1917.
For taxes on coal on that portion of Zenith Dock supposed to be in the corporate limits of the City of Superior, Wisc., as per postal notice attached 1381.30.
Paid under protest.
Taxes accrued.

(Signed) BENNETT,
Auditor.

Approved:

____ ____,
President & Gen'l Manager.

465 *Personal Tax Receipt, 1916* No. 803 F.

CITY OF SUPERIOR, WIS., 1/12, 1917.

STATE OF WISCONSIN,
Douglas County:

Received of Zenith Furnace Co. Duluth, Minn. $1381.30. Thirteen hundred eighty one and 30/100 Dollars in full payment of all Personal Taxes charged on tax roll of above city for the year 1916.

Personal tax.	Valuation.	General tax.	Sewer dist. No.	Total taxes.
9 Ward	50000	1381.30		1381.30

Paid under protest.

G. W. KANE,
City Treasurer.

(Stamped on back):

Answered
Zenith Furnace Co.
Received
Jan. 15, 1917
A. M. . P. M.

466 W. J. LEADER, being duly sworn as a witness on behalf of the State of Minnesota, testified as follows:

Direct examination.

By Mr. Bailey:

(Papers marked Minnesota Exhibits 44, 45 and 46, respectively.)

Q. Mr. Leader, what position do you occupy?
A. County Clerk of Douglas County, Wisconsin.
Q. And how long have you been in that office?
A. I have been in the office for twenty-seven years; I have been County Clerk about seven years.
Q. Oh, you were deputy before that?
A. I was County Clerk in 1891 and 1892, and then deputy until 1911.
Q. So you have been there about twenty-seven years; did you say?
A. Yes.
Q. Now, as such county clerk what do you have to do with the collection of real-estate taxes in Douglas County, if anything?
A. Well, I keep the record of the sale of taxes, and make statements of the amount due, and countersign the treasurer's receipts. Until 1913 the collections were made in our office, but the Legislature that winter changed it, so that the treasurer makes the receipts.

Q. I see. And in case taxes are not paid but become delinquent and the property goes to sale, then how is it handled?

A. The treasurer issues a certificate of sale and the record of that sale is kept in my office.

467 Q. Now showing you papers which have been marked Minnesota Exhibits 44, 45 and 46, I will ask you what those are. What do you call them?

A. Certificates of sale.

Q. Certificates of sale for the taxes of the years 1914, 1915 and 1916 issued by the County Treasurer of Douglas County, covering the property described in the certificates?

A. They are for the taxes for 1913, 1914 and 1915. The sale takes place the June afterwards.

Q. Oh, I see.

A. The June of the next year. That certificate of sale of 1914 is for the 1913 tax.

Q. It says 1914 at the top; that is the reason I spoke of it in that way. And if that is true, they are certificates of sale for the respective years you have mentioned?

A. Yes.

Q. Issued by the County Treasurer on the property therein described?

A. Yes, sir.

Q. This property described in each of them, I take it, you know to be the property in dispute between the States of Wisconsin and Minnesota, and just northerly of the dredged channel out here in the waters between Minnesota and Wisconsin?

A. Yes, sir; this is part of the property in dispute.

Mr. Bailey: I will offer in evidence Minnesota Exhibits 44, 45 and 46, and I wish it would be stipulated that the reporter may make copies and return the originals.

The Commissioner: Have you any objection to the offer?

Attorney-General Owen: We stipulate as requested, but object to the exhibits as incompetent, irrelevant and immaterial.

The Commissioner: The exhibits will be received subject
468 to the objection, and copies made and substituted for the originals as agreed by counsel, and the originals returned to the counsel for the State of Minnesota.

Minnesota Exhibits 44, 45 and 46 are in the words and figures following, to-wit:

MINNESOTA EXHIBIT 44

Tax Certificate Sale of 1915. *No. 3746.*

STATE OF WISCONSIN,
County of Douglas, ss:

County Treasurer's Office, May 18, 1915.

I, Henry Beglinger, County Treasurer of the County of Douglas, in said state, do hereby certify that I did at Public Auction, pursuant to notice given as by law required, on this 18th day of May, A. D. 1915, sell to C. W. Andrews the lands herein described, for the sum of Twelve hundred Seventy-one Dollars and Forty-nine Cents said sum being the amount due and unpaid for taxes, interest and charges on said lands for the Year of Our Lord, One Thousand Nine Hundred and Fourteen, that said C. W. Andrews his heirs and assigns, will therefore be entitled to a Deed of Conveyance of said lands in three years from date, unless sooner redeemed from such sale according to law. Said lands are described as follows, with the sum for which each tract was sold set opposite each description, that is to say:

City of Superior.

That part of land and land under water; commencing at a point on the E line of Sec. 16 Tp 49, R. 14, W in the City of Superior, Douglas Co., Wis., and distant 121 ft. N of E¼ cor. of said section, thence N 89° 40′ W for a distance of 11429.8 ft., thence S 0° 10′ W for a distance of 1755 ft., more or less, to the center
469 of the original channel, of the St. Louis river, which is the place of beginning, thence S 0° 10′ West for a distance of 1650 ft. more or less to the established dock line on Nly side of the dredged channel of the St. Louis river, thence Wly and following said dock line for a distance of 1850 ft. more or less, thence N 0° 10′ E for a distance of 200 ft. to the center of the original channel of the St. Louis river, thence Nly and Ely and following said original channel to the place of beginning, containing 60.90 acres, more or less. All of the above bearings are from the true meridian.

Section.	Town.	Range.	Lot.	Block.	Amount.
16	49	14	....	....	$1271.24
			Fee for Tax Certificate.....		.25
					$1271.49

According to the facts.

HENRY BEGLINGER,
County Treasurer.

(Stamp): Ernest Reckitt & Co. produced at Audit.
(Printed on side:) Douglas County.

1

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MINNESOTA EXHIBIT 45.

Tax Certificate Sale of 1914. No. 3918.

STATE OF WISCONSIN,
County of Douglas, ss:

County Treasurer's Office, May 19, 1914.

I, Frank J. Kenyon, County Treasurer of the County of Douglas, in said state, do hereby certify that I did at Public Auction, pursuant to notice given as by law required, on this 19th day of May, A. D. 1914, sell to C. W. Andrews the lands herein described, for the sum of Twelve hundred forty-five Dollars and fifty-four Cents said sum being the amount due and unpaid for taxes, interest and charges on said lands for the year of Our Lord One Thousand Nine Hundred and Thirteen; that said C. W. Andrews his heirs and assigns, will therefore be entitled to a Deed of Conveyance of said lands in three years from date, unless sooner redeemed from such sale according to law. Said lands are described as follows, with the sum for which each tract was sold set opposite each description, that is to say:

City of Superior.

North 20/100 That part of land and land under water: commencing at a point on the E line of Sec. 16, Tp. 49, R. 14, W in the City of Superior, Douglas Co., Wis., and distant 121 ft. N of E¼ cor. of said section, thence N 89° 40′ W for a distance of 11429.8 ft., thence S 0° 10′ W for a distance of 1755 ft., more or less, to the center of the original channel of the St. Louis river, which is the place of beginning, thence S 0° 10′ West for a distance of 1650 ft. more or less to the established dock line on Nly side of the dredged channel of the
471 St. Louis river, thence Wly and following said dock line for a distance of 1850 ft. more or less, thence N 0° 10′ E for a distance of 200 ft. to the center of the original channel of the St. Louis river thence Nly and Ely and following said original channel to the place of beginning, containing 60.90 acres, more or less. All of the above bearings are from the true meridian.

Section.	Town.	Range.	Lot.	Block.	Amount.
16	49	14	.....	.....	$1245.29
		Fee for Tax Certificate			25
					$1245.54

FRANK J. KENYON,
County Treasurer.

According to the facts.

Stamped: Ernest Reckitt & Co. produced at Audit.
(Printed on side): Douglas County.

MINNESOTA EXHIBIT 46.

Tax Certificate Sale of 1916. *No.* 4008.

STATE OF WISCONSIN,
Douglas County, ss:

County Treasurer's Office, June 13, 1916.

I, Henry Beglinger, County Treasurer of the County of Douglas, in said state, do hereby certify that I did at Public Auction, pursuant to notice given as by law required, on this 13th day of June, A. D. 1916, sell to C. W. Andrews the lands herein described,
472 for the sum of One Thousand three hundred and two Dollars and nine Cents said sum being the amount due and unpaid for taxes, interest and charges on said lands for the Year of Our Lord, One Thousand Nine Hundred and Fifteen; that said C. W. Andrews his heirs or assigns, will therefore be entitled to a Deed of Conveyance of said lands in three years from this date unless sooner redeemed from such sale according to law, and the rate of interest in case of redemption shall be 15 per cent per annum. Said lands are described as follows, with the sum for which each tract was sold set opposite each description, that is to say:

City of Superior.

That part of land and land under water; commencing at a point on the e line of Sec. 16, Tp 49, R 14 W. in the City of Superior, Douglas Co., Wis., and distant 121 ft. n of E¼ cor. of said section; thence n 89° 40′ w for a distance of 11429.8 ft; thence s 0° 10′ west for a distance of 1755 ft more or less, to the center of the original channel of the St. Louis river, which is the place of beginning; thence s° 10′ west for a distance of 1650 ft. more or less, to the established dock line on nly side of the dredged channel of the St. Louis River; thence wly and following said dock line for a distance of 1850 ft. more or less; thence n 0° 10′ e for a distance of 200 ft. to the center of the original channel of the St. Louis river; thence nly and ely and following said original channel to the place of beginning, containing 60.90 acres, more or less. All of the above bearings are from the true meridian.

Section.	Town.	Range.	Lot.	Block.	Amount.
16	49	14	.....	.....	$1,301.84
473	Fee for Tax Certificate.....				1,302.09
					1,302.09

HENRY BEGLINGER,
County Treasurer.

According to the facts.

(Printed on side): Douglas County.
(Stamped on back): Answered
Zenith Furnace Co.
Received
A. M. Sep- 5, 1916. P. M.

Examined by Mr. Hanitch:

Q. Mr. Leader, how long have you lived in the city of Superior, Douglas County?
A. Since 1885.
Q. I think you testified that you have been in the County Clerk's office and county clerk or deputy since 1891?
A. Yes, sir.
Q. Did you know Charles Lagro in his lifetime?
A. Yes, sir.
Q. Do you remember when he was county clerk of Douglas County, Wisconsin?
A. Yes, sir.
Q. Was he your predecessor?
A. Yes, sir. Well, not exactly. There was a month—Lagro's term of office expired the first Monday in January, 1891, and the clerk who was elected to the office was disqualified along in
474 February, and I was appointed.
Q. Was Lagro County Clerk in 1899?
A. In 1889.
Q. In 1889?
A. Yes, sir.
Q. Do you remember of ever having seen a map that was published by Lagro while he was County Clerk?
A. Yes, sir.
Q. I show you Minnesota Exhibit 26 and ask you to state whether that is a copy of the map that was issued by Charles Lagro in 1889.
A. Yes, sir, that is the map.
Q. Mr. Leader, as county clerk of Douglas County do you have in your possession the records showing the proceedings of the County Board of Douglas County during the year 1889?
A. Yes, sir, I have it here.
Q. Is there anything in those proceedings relating to this Lagro map? Just answer that yes or no.
A. Yes, sir.

(The witness produces a record book.)

Q. What record do you have in your hands now?
A. Volume 3 of the Proceedings of the County Board of Douglas County, Wisconsin.
Q. Will you kindly turn to the page that contains the record of the proceedings of the County Board relating to the Lagro map?
A. On page 352 of this volume 3, proceedings of November 15, 1889.

Q. What other page?
A. Page 352 and page 357 of the same record.

Mr. Hanitch: We offer in evidence these pages, 352 and 357, and we would like to have the counsel stipulate that the witness may
475 read that part of the record which relates to the Lagro map and have the same stand in this record in lieu of the original, because this is one of the county records.

The Commissioner: Let the counsel see it.

Attorney-General Owen: We will probably stipulate that. Let us see what you want to read in.

Mr. Hanitch: Come here and I will show you, and then I will ask the witness to read it.

(The record referred to was examined by Attorney-General Owen.)

Attorney-General Owen: Have you offered that?

Mr. Hanitch: I will ask him some further questions.

Q. Mr. Leader, the part of the record on page 352 is part of the record of what?
A. Of the adjourned annual meeting held on November 15, 1889.
The Commissioner: Of the board of supervisors of Douglas County, Wisconsin.
Witness: Of the board of supervisors of Douglas County, Wisconsin.
Q. And that which appears on page 357 is a record of what?
A. Of an adjourned meeting held on November 19, 1889.
Q. Of what?
A. Of the annual meeting of the County Board of Supervisors of Douglas County, Wisconsin.

Mr. Hanitch: I now offer the following part of the record appearing on page 352.

The Commissioner: Part of the proceedings of the Board
476 relating to the Lagro map?

Mr. Hanitch: The Lagro map.

Attorney-General Owen: Right here I want to object to the introduction of that part of the proceedings of the County Board, on the ground that it is incompetent, irrelevant and immaterial; that the action of the County Board in that respect was ultra vires and void and unauthorized by law.

The Commissioner: The offer is taken subject to the objection made, and the witness may read that part of the record into the record of these proceedings.

Mr. Hanitch: And it is stipulated that that will stand in lieu of the original record?

The Commissioner: It is so stipulated.

Witness (reading): "Supervisor Berlinger moved that the County Clerk be instructed and authorized to furnish each supervisor with pocket copies of Charles Lagro's new map of Douglas County, which motion was carried unanimously."

Q. Now read from page 357.

A. On page 357 it reads: "The following resolution was adopted: Resolved by the County Board of Douglas County that the County Clerk be and is hereby instructed and authorized to furnish the offices of the county officers and each school room in the county with a wall map of Charles Lagro's new map of Douglas County; the expense to be carried by the County."

On the same page is a list of claims allowed by the County
477 Board. At the top of the page it reads: "Number of Claims; Name of Claimant; Nature of Claim; Amount Allowed; Amount Disallowed," and under "Number of Claim" appears "752;" under "Name of Claimant, Charles LaGro;" under "Nature of Claim, 12 maps of T. C. (bound);" under "Amount Allowed," "$20.25."

Q. Mr. Leader, state whether or not a copy of this Minnesota Exhibit 26 was in the County Clerk's office when you went into that office and hung on the wall there?

A. Oh, yes, it hung there for a great many years—such a map.

Q. State whether or not that map was one that was generally used throughout the City of Superior, and the County, as a map of Douglas County, and showing the waters and land?

A. Yes, sir.

Cross-examination.

By Mr. Gard:

Q. It is not any part of the County Clerk's duties to get out a map such as this one, is it?

A. No, sir.

Mr. Hanitch: That is objected to as calling for a conclusion of law.

The Commissioner: The witness may answer; we will take it subject to the objection.

A. No, sir.

Q. And you do not know of any authority that existed in 1889 for the County Clerk to get out a map, as an officer, do you?

A. No, sir.

Mr. Hanitch: Same objection.

The Commissioner: Same ruling.

478 Q. And was this map gotten out as an official map in any way?

Mr. Hanitch: Same objection.

The Commissioner: Same ruling.

A. No, sir; it was a commercial enterprise on Mr. Lagro's part.

Q. Mr. Lagro was County Clerk, was he, at the time he sold those copies to the County?

A. Yes, sir.

Q. Mr. Leader, did you ever know of this map to be referred to

for the purpose of determining where the state line was between Minnesota and Wisconsin?

A. No, sir.

(The witness was excused.)

(A short recess was here taken.)

SOLON J. BUCK being duly sworn as a witness on behalf of the State of Minnesota, testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Buck, where do you reside?

A. Minneapolis.

Q. How long have you lived there?

A. It will be three years next month.

Q. What position do you occupy?

A. I am associate professor of history in the University of Minnesota, and I also hold the position of secretary and superintendent of the Minnesota Historical Society.

Q. And how long have you held that latter position?

A. Since November, 1914.

479 Q. And as such assistant secretary you have charge of the records and files and books of the Minnesota Historical Society, have you?

A. I have.

Q. When was the Minnesota Historical Society organized, do you know?

A. 1849.

Q. And what is its business?

A. To collect and preserve materials for the history of Minnesota and the northwest in general.

Mr. Fryberger: What was the date of that organization?

Witness: 1849.

Q. And has it a building of its own now?

A. A building has been constructed for it by the State of Minnesota, but it is not yet occupied, not quite completed.

Q. About what cost?

A. Half a million dollars.

Q. And to what extent has it accumulated publications and files and records? That is, I mean can you give some idea as to the number it has?

A. It has a library of approximately 125,000 volumes.

Q. And is its especial business to collect ancient records and records relating to biography and population, and all that sort of thing, as it goes along and as it can get them?

A. Yes, sir.

Q. Now, at the request of General Smith and at my request have you made some search amongst the records of the Minnesota His-

torical Society for records and publications amongst its files purtaining to the boundary between Minnesota and Wisconsin?

A. A very brief search, yes, sir.

480 Q. You just commenced that when?

A. Saturday afternoon.

Q. Last Saturday.

A. Yes.

(A map in a small volume produced by the witness was marked Minnesota Exhibit 47.)

Q. Calling your attention to Minnesota Exhibit 47, I will ask you if that is one of the files of the Minnesota Historical Society?

A. It is.

Q. And if the map in front of this book is a part of the publication and part of your files?

A. It is.

Q. Do you happen to know, or is there anything on here to indicate, when it was acquired by the Minnesota Historical Society?

A. The acquisition number 9,203 would indicate that the book was one of the earlier books acquired by the society, one of the first ten thousand books acquired by the society.

Q. Could you tell about when that would bring it, what year, somewhere along?

A. I presume that book was acquired before 1870.

Q. I see the map is dated 1838.

A. Yes, sir.

Q. And attached to a book which is entitled, on the title page, "Observations on the Minnesota Territory, Chiefly on that Part called the Wisconsin Land District, Exhibiting the Settled Parts of the Territory as laid off in Counties by the Act of the Legislature in 1837." And I see in lead pencil below that the name "William R. Smith." Do you happen to know what that name indicates?

A. That has been written in by the cataloguers to indicate the name of the author, and it is found printed at the end of

481 the preliminary remarks, thus showing that he is the author of the book.

Q. And I see it is "Entered According to the Act of Congress in 1838." You understand that to be a publication gotten out about the year 1838?

A. Yes, sir.

Mr. Bailey: We will offer Minnesota Exhibit 47 in evidence. What we are offering it for is particularly the map which is included in the publication, but Mr Buck tells me that he would prefer not to have the map torn out.

The Commissioner: You have a photograph of the map, have you?

Mr. Bailey: No, I have not photographs of the map, but I think we will just let the whole thing go, although the map is what we are offering it for.

The Witness: You can take that out if you want to. I have not any objection to your taking that out.

Mr. Bailey: Talking with the Attorney-General and Mr. Fryberger, they seem to think we may have to print everything that is offered, and we are not offering this for the reading matter. So, with the consent of counsel, I will withdraw the reading part of the book and simply offer the map.

Mr. Fryberger: Cannot we have an understanding, Mr. Bailey, that you may offer a photograph of this?

The Commissioner: I presume you want to retain that in the Historical Society library?

Mr. Bailey: Yes.

482 The Commissioner: Make your offer of the map, or such parts of it as you want to.

Mr. Bailey: Will you stipulate that the map may be photographed and the photograph substituted for the original, that we may have that done, withdrawing it for that purpose?

Attorney-General Owen: Yes.

Attorney-General Smith: I think before we get through we can perhaps make an arrangement with Judge Roberts by which we can exclude from the record immaterial matters. We had one case where our printing bill was over $9,000.

Attorney-General Young: Perhaps we can get up a precipe.

(Another small volume produced by the witness and a map therein marked Minnesota Exhibit 48.)

Q. Mr. Buck, showing you——

The Commissioner: Wait a minute, Mr. Bailey, and let us finish up with this other first. Now, Mr. Bailey, do I understand you offer the map only in this last exhibit 47?

Mr. Bailey: Yes, I think so; at any rate we do not want to print the volume.

The Commissioner: Have you any objection to the map, Mr. Owen?

Attorney-General Owen: I want to ask some questions about this map.

Mr. Bailey: Do you want to cross-examine now, or wait until we get through?

Attorney-General Owen: Just with reference to the admissibility of this map.

483 Mr. Bailey: All right.

Examined by Attorney-General Owen:

Q. Now, Mr. Buck, have you read any part of this volume to which this map is attached?

A. I glanced over some parts of it the other day.

Q. And from your observation what does the volume appear to be?

A. My impression is that it is just simply an account of a man's observations in Wisconsin territory.

Q. Do you know who this man Smith was?

A. I do not.

Q. Do you understand that Mr. Smith prepared this map?

A. I do not.

Q. Who, do you understand, prepared the map?

A. I think there is an inscription on it which states that.

Q. The map purports to have been compiled and published by Hinman and Dutton of Philadelphia, does it not?

A. Let me see it.

Q. Now, then, do you notice the note at the bottom of page 2, which says "Messrs. Hinman & Dutton of Philadelphia have lately published an accurate map of Wisconsin with the new counties laid off. This map is attached to the works, although the text has not been altered."

A. I had not noticed it.

(The book was handed to the witness and he examined the same.)

Witness: There is such a note; yes, sir.

Q. How do you construe that?

A. I should consider it an obscure statement. I am unable to say whether by the text the writer means the text of the
484 book or the text of the map. I do not know what the meaning of that statement is.

Q. Would it indicate that this was a reprint of a former work?

A. The map, you mean?

Q. The book.

A. No, it would not, to my mind.

Q. Might it indicate that the publishers had put that there themselves, on their own responsibility?

A. That is a possibility.

Q. That would be inferred from the statement that the text has not been changed, if it refers to the text of the book, would it not?

A. It might. The meaning is not clear.

Q. Now, you do not know whether that is a map of general circulation or not, do you,—in general use?

A. I know that the firm of Hinman & Dutton were established map makers, and from that I should assume that this was one of their regular commercial maps, made for general circulation.

Q. And that is all?

A. That is all.

Q. However, this is the only copy of that map that you ever saw?

A. So far as I definitely recollect.

Q. Now, from your cursory glancing over of this work, does it appear how long Mr. Smith spent looking over the State of Wisconsin or the territory of Wisconsin?

A. I have not examined the work with sufficient care to answer that question. I do not know. My time was very limited.

Attorney-General Owen: Now we object to the receipt of the map in evidence on the ground that it is incompetent, irrelevant, and immaterial and has not been properly authenticated.

485 The Commissioner: Just let me see that. (After examination): It purports to be an ancient map, and it may be admitted subject to the objection. Now do you stipulate, gentlemen, that the State of Minnesota may make a photographic copy of the map and substitute it for the original?

Attorney-General Owen: Yes, we stipulate that, although I think you ought to leave this volume here so that we can have an opportunity to glance it through and see who Mr. Smith is or what his work purports to be. Have you any objection to that?

Attorney-General Smith: Not to leaving it here for temporary purposes.

Attorney-General Owen: That is all.

Mr. Bailey: But Mr. Buck would like to get it back.

The Commissioner: I hope counsel for Minnesota will proceed with all diligent speed to get a photographic copy of the map. Or I suppose you may make a photograph of such parts of it as you want to or think are material.

By Mr. Bailey:

Q. Calling your attention, Mr. Buck, to Minnesota Exhibit 48, I will ask you if that which purports to be a sectional map of the surveyed portion of Minnesota and the northwestern part of Wisconsin, as stated on the title, and which on the first page of the binding is described as Sewell's map of Minnesota, sold wholesale and retail by George Little, Catholic Block, Third Street, St. Paul, sole agent for Minnesota, sent by mail, postpaid, on receipt

486 of $1.25, St. Paul, 1864," if that is one of the files and records of the Minnesota Historical Society.

A. It is.

Q. And can you tell about when that was acquired by this society?

A. Presumably about the time it was published.

Mr. Bailey: We will offer that in evidence and would like also to have it stipulated that that may be photographed and the photograph substituted for the original.

Attorney-General Owen: We object to the receipt of this exhibit 48 on the ground that it is incompetent, irrelevant and immaterial, and has not been properly authenticated.

The Commissioner: It may be received subject to the objection. Now do you make the same stipulation with reference to a photograph of that too?

Attorney-General Owen: Yes, sir.

The Commissioner: You may let the record show that it is stipulated that the State of Minnesota may make a photographic copy of the last exhibit, or such part thereof as it deems material, and substitute the photograph for the original.

(A small pamphlet was marked Minnesota Exhibit 49.)

Q. Mr. Buck, calling your attention to a pamphlet marked Minnesota Exhibit 49, I will ask you if that is one of the records of the Minnesota Historical Society.

A. It is.

Q. And this appears to be entitled, on the first page at any rate, as "Accompaniment to the Map of Minnesota," but there is
487 no map attached to this particular pamphlet. I will ask you if the Society has another pamphlet with the map attached.

A. It has.

Q. And you have examined that map with reference to this particular case, have you?

A. I have.

Q. Does it show any part of Lake Superior or the St. Louis River, or anything in that vicinity?

A. It does not.

Mr. Bailey: Now Mr. Buck wants to arrange so this can be taken away, but left here long enough for you to examine it as much as you want to, and there is just one clause I want to get in.

Attorney-General Owen: Read it.

The Commissioner: It does not appear yet how old that is.

Mr. Bailey: It will appear soon. I was going to ask Mr. Buck next. There is no date on the outside.

Q. Mr. Buck, have you examined this to see whether there is any indication as to when it was published?

A. I have.

Q. Did you find anything in the text itself which indicates when it was published?

A. I find the following statement, on page 9: "At the present time, April 1850, the population of Minnesota," and so forth, which indicates that the pamphlet was written in April, 1850.

Q. And can you tell about how long that has been in the collection of the Minnesota Historical Society?

A. I have no means of telling that with any definiteness except that it has a note on the back, written in ink, signed by Alfred J. Hill, who was at one time connected with the society, and
488 dated 1885, which indicates that it has been the property of the Society since 1885.

Q. Can you tell by an inspection by whom that was published or gotten out?

A. By Thomas, Cowperthwait & Co., Philadelphia.

Q. Were they map publishers?

A. They were.

Q. Do you know what the tittle of the map is which accompanied that?

A. The map is entitled "Map of the Organized Counties of Minnesota published by Cowperthwait of Philadelphia in 1850."

Q. You say that the particular map does not come up as far as the Lake Superior and the St. Louis River?

A. Yes, sir.

Q. Do you find any statement in this pamphlet with reference to the St. Louis River and the head of the lake? If so, please designate the page and read into the record the statement which you find.

A. I find on page 4 of this pamphlet the following statement: "The St. Louis River, which empties into the western extremity of Lake Superior, or Fond du Lac, as it is called, is navigable near its mouth, but like all the streams which flow into Lake Superior, it is full of falls and rapids. Near the mouth there is a settlement of half-breeds, a Chippewa Indian village, and an Indian trading house."

Q. Of how many pages does this publication consist?

A. Sixteen pages.

Q. And the size of its pages is about five inches by three inches?

A. About 3 by 5.

Mr. Bailey: Unless it is desired, I think we will not offer
489 this in evidence, but we will leave it here so you can examine it if you like. We do not want to print it all, that is all. We offer that part that the witness has read, of course.

Attorney-General Owen: Yes, we understand that.

The Commissioner: Any objection to that?

Mr. Bailey: And I take it, it may be understood that what the witness has read stands in lieu of the original?

Attorney-General Owen: Yes.

(A cloth-bound volume produced by the witness was marked Minnesota Exhibit 49.)

Q. Mr. Buck, calling your attention to Minnesota Exhibit 49—the quickest way is to ask you to describe just what that is.

A. It is a book entitled, "Collections of the State Historical Society of Wisconsin. Edited and Annotated by Reuben G. Thwaites, Corresponding Secretary of the Society. Vol. XI. Published by Authority of Law. Madison, Wisconsin. Democrat Printing Company, State Printers. 1888."

Q. Is this particular volume a part of the Minnesota Historical Society's collection?

A. The Minnesota Historical Society possesses a duplicate of this volume. This particular copy belongs to me personally.

Q. State what you know as to whether that is a well-recognized publication of the Wisconsin Historical Society?

A. It is.

Q. What, if anything, do you know of the editor or his reputation—Mr. Thwaites?

A. Dr. Thwaites was for about twenty-five years secre-
490 tary and superintendent of the Wisconsin Historical Society, and was one of the leading authorities on the history of the Northwest.

Q. This is a volume of how many pages?

A. 548.

Q. And I take it, of course, this publication was in general circulation after it was issued.

A. Yes, sir.

Q. Relating to these matters, and well recognized by historians?

A. Yes, sir.

Q. Now, do you find in this publication a reference to the state boundary between Wisconsin and Minnesota at the head of the lake and along the St. Louis River?

A. It contains an article entitled "The Boundary of Wisconsin, by the Editor."

Q. And did you find, on page 493, a paragraph or statement with reference to the survey of this boundary by Mr. Stuntz?

A. I do.

Q. Will you please read into the record the paragraph you have indicated?

A. (reading) "In 1852 the general government employed George R. Stuntz to run and mark the land line from 'the first rapids in St. Louis River, above the Indian village, according to Nicollet's map, thence due south to the main branch of the river St. Croix.' He performed the task with the aid of nine men, between October 20 and November 18. The site of Nicollet's Indian village is known as Fond du Lac, being from Lake Superior. It is at the point where the waters of the lake ordinarily meet, in a narrow bay, those of the river. The point of juncture, however, varies with the height of the water-level in the lake—in
491 some years and in some seasons receding, while advancing in others. When Mr. Stuntz arrived, he was assured by the Chippewa chief at Fond du Lac that the first rapids of the river were opposite a trading warehouse at his village. But the water being high, no rapids were visible at this place. Whereupon, the surveyor proceeded up stream to a point where he was no longer able to propel his canoe with a single paddle, against the rushing current. Here, where the river runs due south for a few rods, he decided the "first rapids" to be; and on a high bluff, a quarter of a mile due south of this, he set his first post in the boundary. His plan of establishing the location of the first rapids was accepted by the topographical bureau; and thus Wisconsin gained, by the high water which chanced to prevail at the Fond du Lac that October day, thirty-six years ago, a ribbon of dense pine forest forty-two miles long by about half a mile broad."

The Commissioner: That is the official publication of the Historical Society, is it?

Witness: Yes, sir.

The Commissioner: I guess that accords with the testimony spread upon the record.

Mr. Bailey: I guess that confirms the testimony of Mr. Merritt about giving the axe to the Minnesota Historical Society.

Mr. Fryberger: Yes, but he ought to have given the axe to Wisconsin, but he didn't.

492 Mr. Bailey: Yes.

The Commissioner: The offer is received.

(A map was marked Minnesota Exhibit 50.)

Q. Calling your attention to Minnesota Exhibit 50, I will ask you if that is one of the files of the Minnesota Historical Society?

A. It is.

Q. Do you know whether it was acquired about the time——

A. There is no date on it.

Q. Do you know about when it was acquired?

A. Presumably about 1887, when it was published.

Q. And what was that map taken from, or what is it a part of?

A. The map is Plate No. 20, taken from a portfolio entitled "Atlas Accompanying Volume 3 Geological Survey of Wisconsin, T. C. Chamberlain, Chief Geologist, 1877." The map itself is entitled "Douglas County and parts of Bayfield, Burnet and Ashland Counties, North of Town 43, by E. T. Sweet; South of Town 44 by Moses Strong."

Q. Well, it is entitled, even on top of that, Wisconsin Geological Survey, T. C. Chamberlain, Chief Geologist," is it not?

A. Yes, sir.

Q. And do you understand that to be an official publication by the Geological Department of the State of Minnesota?

A. An official publication of the Geological Survey of Wisconsin; yes, sir.

Q. Under state authority of Wisconsin?

A. Yes, sir.

Mr. Bailey: We will offer Minnesota Exhibit 50 in evi-
493 dence.

Q. I think you have testified, Mr. Buck, that this publication was in 1877?

A. Yes, sir.

The Commissioner: Any objection to Exhibit 50?

Attorney-General Owen: I object to this as incompetent, irrelevant and immaterial, and for the further reason that it is not the function of the geological survey to locate boundary lines, and it was not the purpose of this map to indicate the boundary line between the State of Minnesota and the State of Wisconsin.

The Commissioner: It is sufficiently old. It will be received subject to the objection.

Q. Mr. Buck, of what school are you a graduate?

A. The University of Wisconsin.

Q. In what year?

A. 1904.

The Commissioner: Now do you desire to photograph this sheet?

Mr. Bailey: We would like to have the same stipulation with reference to that that we have with reference to the previous exhibits,

as to photographing and substituting the photographic copy in place of the original. Is that satisfactory, General Owen?

Attorney-General Owen: We are going to make a similar request as we proceed with our case. I suppose there will not be any objection from your side?

Mr. Fryberger: Oh, no.

A recess was here taken until two o'clock P. M.

494 Cross-examination.

By Attorney-General Owen:

Q. Mr. Buck, I presume there are great quantities of maps in your historical library down there?

A. Yes, sir.

Q. And a great many maps of the State of Wisconsin?

A. I should think so, yes, sir.

Q. They are all kept in a department or room by themselves, are they?

A. Our quarters are very cramped and maps are kept in various places. Many of them in vaults; many of them are in together with the pamphlets and in various places. The society now occupies simply a few rooms in the basement of the Capitol and the maps have never been classified, and are not in very good arrangement.

Q. In your search for maps did you find any maps of the State of Wisconsin except those that you brought here?

A. Oh, yes.

Q. How many would you say?

A. Why, it would be impossible for me to give any definite number of how many maps we have of Wisconsin, other than that there are other maps of Wisconsin.

Q. You found other maps of the head of the lakes region here besides these that you brought?

A. Yes.

Q. Why did you pick out these particular two or three maps to be brought up here?

A. Because they seemed to throw light upon the location of the boundary.

Q. Were those the only ones that threw light on it?

A. There were none that threw any additional light on it that I saw.

Q. Or any different light?

A. Yes, or any different light on the location of the boundary.

Q. Where is the map that came out of this pamphlet?

495 A. There is a folder with a map in it right under there (indicating).

Q. You had three here, didn't you; you brought three maps, didn't you, altogether?

A. I think so. I think there were three introduced. There was another one in the book, I think. You took the book with you.

Q. I asked you to look at the head of Lake Superior as it will be

found on Exhibit number 47, Minnesota, that map doesn't show any Wisconsin or Minnesota Points, does it?

A. I consider these points right there (indicating) are intended to indicate Wisconsin and Minnesota Points. I think these are intended to represent Wisconsin and Minnesota Points; they are very small.

Q. They don't come very close together, do they?

A. The map is on a very small scale and the details are not very accurately drawn.

Q. Did you see any other map in your library that portrayed the head of Lake Superior as that map portrays it?

A. Not exactly, no. Similar, not exactly.

Q. What was the difference between those and the way the maps generally portray it?

A. It is portrayed in various ways. I should say that this is an old and comparatively rough drawing.

Q. Not particularly accurate drawing?

A. It wouldn't be considered accurate if it were on a larger scale. It is a very small scale map and the details, I should say, aren't particularly accurate.

Q. You read into the record this morning an extract from
496 Minnesota's Exhibit number 49. Now I will ask you to read into the record an extract to be found on page 5, commencing there (indicating).

A. "Large quantities of white fish and trout are already taken at the mouth of the St. Louis River and its vicinity, and as the population increases in amount along the shores of the lake the fisheries will be largely extended."

By Mr. Bailey:

Q. Do you know whether the whole upper part of the lake was generally spoken of in historical works as Fond du Lac or Bay of Fond du Lac?

A. It was frequently so referred to, Fond du Lac Bay.

By Mr. Owen:

Q. What does Fond du Lac mean?

A. I looked up the word Fond du Lac in a standard French dictionary, the word "Fond." I did not find the word "Fond du Lac," which is made up of three French words, means head of the lake. The word "Fond" has varying meanings. One of these meanings is "upper end" or "remotest part," and that is undoubtedly the sense in which it is here used,—upper end or remotest part of the lake.

Mr. Bailey: I think that is all we have to offer at the present time.

Attorney-General Smith: I think it is proper to say that I was notified to produce before you today certain documents, and I have produced them to the best of my ability and would like to explain why I have not absolutely conformed with the notice in all respects.

The first document which I was asked to produce was a letter
497 addressed to the Governor of the State of Minnesota by D. D. Gaillard, captain of engineers, U. S. A. I have produced

that original letter and ask that the defendant substitute for it a copy.

Attorney-General Owen: We will read it into the record and let you have the original.

Attorney-General Smith: The next document was the original letter written by M. H. Hovey, safety service expert of the Minnesota Warehouse Commission. I have produced a duly certified copy. The Commission declines to furnish the original. The next was the letter written by W. D. Pence, engineer of the Railroad Commission of the State of Wisconsin to F. B. Jurgeson, engineer of the Minnesota Railroad & Warehouse Commission. I have also furnished a certified copy of that letter. The next documents demanded were originals. Original statement of the position of the legislative committee appointed by the legislature of the State of Minnesota with reference to the boundary. I have not the original statement available and it is probably destroyed. I have produced in place of it the official journal of the Senate of the State of Minnesota for the day when the report was presented, and tender the journal of the Senate, asking that that be read in and that the journal be returned to us, as they are somewhat scarce. The same is true substantially of the last document asked for, which was the original or certified copy of the report made of the 1913 legislature of the State of Minnesota, by the committee appointed by the 1911 legis-
498 lature of the State of Minnesota. That is also found in this same journal, and we ask the same as to that.

The Commissioner: Is the response satisfactory?

Attorney-General Owen: I think so, yes.

499 LAWRENCE MARTIN was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Attorney-General Owen:

Q. Mr. Martin, where do you reside?

A. Madison.

Q. What is your profession or vocation?

A. I am associate professor of physiography and geography of the University of Wisconsin.

Q. How long have you occupied that position?

A. Eleven years.

Q. What was your vocation prior to that time?

A. I was a student of geology.

Q. Where did you study geology?

A. Cornell and Harvard.

Q. Did you graduate from both of those institutions?

A. Yes, sir.

Q. Since your graduation you have been engaged in the teaching of geology, have you?

A. Teaching, and in the investigation of geological problems.

Q. How extensive have your investigations been?

A. I have worked in the field every summer since 1903.

Q. Every summer since 1903?

A. Yes, sir.

Q. About how much of the time during the summer?

A. Three or three and a half months.

Q. What parts of the country have you conducted these investigations in?

A. I have done a great deal of work in Wisconsin and the part of Minnesota around the head of the lakes. Some in Michigan.

500 I have worked in Pennsylvania and New York and in Alaska.

Q. How many seasons were you in Alaska?

A. Six.

Q. How many seasons have you worked in and about the head of the lakes, in Wisconsin and Minnesota?

A. One whole season and parts of two others.

Q. I will ask you to state whether you have written any articles or published any books upon the subject of geology and physical geography?

A. Yes; I have written several reports for the United States Geological Survey and the Geological Survey of Wisconsin. Several things have been published by publishing houses and in magazines.

Q. Did you publish a work on physical geography?

A. Yes, sir.

Q. What is that known as? What is the name of that work?

A. You mean a general work on physical geography?

Q. Any sort of a work. If it isn't general, you can say what it is.

A. I published a special discussion of the physical geography of the Lake Superior region that was published in one of the monographs of the United States Geological Survey; then I published a special book on the physical geography of Wisconsin, discussing this region somewhat, and I edited a large work, college text-book, on the subject of physical geography, which of course discusses rivers and shore lines and features of that sort, but I was not the author of the whole of that work?

Q. What is the name of that work?

A. That is called "College Physiography."

Q. Do you know whether that is used as a text-book in

501 college institutions?

A. Twenty or thirty colleges in the United States use that as a text-book.

Q. Are you in the employ of the Government Geological Survey?

A. I am a member of the United States Geological Survey, working for them during summers, during my college vacations.

Q. And do you belong to any geological associations?

A. I belong to the Geological Society of America and the Association of American Geographers, and I am an honorary member of various geographical societies.

Q. Are you familiar with the waters known as the St. Louis River

and the Bay of St. Louis and the Bay of Superior at the head of the lakes?

A. Yes, sir.

Q. Will you give us some idea of the extent of your investigation of the territory adjacent to these waters?

A. In 1907 I was sent here by the United States Geological Survey to study this region and to write a description of the physical geography and of the glacial geography of the Lake Superior region. I spent the whole summer around Lake Superior, and of that time I spent several weeks around Duluth and Superior.

Q. From the knowledge of these waters gained at that time you may state whether in your opinion the waters generally referred to as the Bay of St. Louis and the Bay of Superior, are part of St. Louis River or part of Lake Superior?

A. They are part of St. Louis River.

Q. Now, upon what do you base that conclusion? State your reasons for saying that they are part of the St. Louis River?

502 A. I state that because that would be the generally accepted interpretation by any geographer or geologist. That is, a river is a feature with banks and a flowing current, and as I see it St. Louis River has banks all the way from a way back to its source down past the City of Superior and out to the Superior Entry. It has a flowing current for that distance.

Q. State whether or not in your judgment there was always that broad expanse of water that is now referred to as the Bay of Superior and the Bay of St. Louis?

A. No, sir. There was a time back in what geologists call recent times, although we talk about a little matter of 50,000 years, don't regard it of much account, when there was a narrow river all the way down through here, similar to the St. Louis River, above Fond du Lac. That river was drowned in its lower course and made into an estuary.

Q. That river was drowned, you say?

A. Yes, sir.

Q. What do you mean by that?

A. I mean that the waters of Lake Superior have backed in there through a tilting of the earth's crust in this general part of the world and have submerged the river channel and made it into that broader type of river that we call an estuary.

Q. Is it a generally accepted fact among geologists that there was a tilting of the earth's crust in this locality?

A. That is accepted by the geologists.

Q. Explain what you mean by that tilting of the earth's crust and also explain the effect that it had upon the flow of Lake Superior?

503 A. We know that the shore lines of the lake are horizontal because lake surfaces are horizontal, of course taking into account that there is a curvature of the water body, a natural broad curvature. We know that Lake Superior had a higher level than the present lake. The water was about 500 feet deep here at Superior and Duluth and we can trace the beaches of these higher

lakes and we find that these beaches are not horizontal; they rise towards the northeast. Therefore, we conclude that the land has been tilted. The effect of that has been to back the waters of the lake into the mouths of all the streams on the south, southeast end of the Great Lakes, and to make a series of estuaries which they use for shipping port here and which they use for receiving ports at the towns on the south side of Lake Erie to receive our iron ore. As supplemental proof of the tilting here we take into account the form of the estuary. That is, it is a branching body of water such as you would get by submerging a river and its branches. Any geologist or geographer looking at a map of these waters would say at once that it is a drowned river; and then to back that up we have the statements of people who came here in early times, that they found the stumps of trees submerged.

Q. Why would the geographer say at once that this was a submerged river?

A. Because he knows the form of an ordinary river. That is a river and its branches make a pattern something like that of a tree and its branches, and he reasons out that if you fill that with water the water would back up the tributaries and make a branching pattern, an estuary.

504 Q. The Big Pokegama and Little Pokegama Bay furnish an example of that?

A. Those are drowned tributaries of the drowned St. Louis River.

Q. And before the water backed up in here those were small valleys——

A. Yes, sir.

Q. On the surface of the earth. Have you studied the points known as Grassy Point, Connors Point, Rice's Point, Minnesota and Wisconsin Points?

A. Yes, sir.

Q. With a view of judging how they were formed?

A. Yes, sir.

Q. Starting with Grassy Point give us your opinion as to how that point was formed?

A. Grassy Point is the hardest one in the group. It is the hardest one in the group, the most complicated one of the group to classify. It seems to me clear, however, that it is of entirely different origin than the other four that you mentioned. I think it is a spur between two drowned valleys like the higher spurs between Pokegama Bay and the next bay, and all of the other points that we have up river from Grassy Point, and that it is lower than the others because the waves or the waters of the bay, or both, have cut in there and cut away the original deposit. Then a little sand and silt have been laid on that surface and then man has filled in a little more. Connors Point and Rice's Point, a pair, and Wisconsin Point and Minnesota Point, a pair, are built by the waves of the lake and the along-shore current of the lake in a place where there was no previous land.

Q. State how in your judgment those points were built up?

A. It is a combination of two things. The waters of the
505 lake are oscillating. They are in waves, caused by the wind, and there is an up and down motion of the water which doesn't affect the bottom where the water is deep. When you get into the shallow water the up and down movements or oscillation of the water is interfered with and so the wave is overturned and that makes breakers or surf, and the overturning causes the stirring up of the bottom and the heaping up of gravel and sand there. Then the currents along shore in the lake carry material that the waves have worn from the head lands along and at certain points where there is an angle in the coast these currents turn out into the deeper water, carry the material out and drop it when they get into such deep waters that the current is checked, and such combination of the work of the waves and the work of the along-shore currents built Connors Point and Rice's Point first, and then subsequently built Wisconsin Point and Minnesota Point.

Q. Was Minnesota Point in your judgment built throughout its whole length at the same time or did it start at the Minnesota shore and was gradually carried out?

A. As it shows above the surface of the water, it was built first from the Minnesota end, but below water there was a gradual shoaling there, so we may say that all of it was being built up a little bit at the same time, and Wisconsin Point also at that time.

Q. But progress was made faster near shore?

A. Naturally in the shallow water.

Q. Do you think that the river water had anything to do with forming any of these points?

A. Nothing.

506 Q. Nothing whatever?

A. No, sir.

Q. What do you say as to their being tides in Lake Superior?

A. There are several kinds of movements of water here, and one of them is a true tide. That is, the geographer uses the name tide only for the rise and fall of the waters' surface in relation to the attraction of the moon or the sun and moon combined. Now, there is an actual tide of about three inches in the west end of Lake Superior. In addition to that there is a rise of the water in relation to the blowing of the wind over the surface, and this you call a wind tide. The wind being from the northeast piles the water up at the west end of the lake. And then besides that there is a third thing that is called seiches and that is a phenomena due to barometric pressure. When that pressure is high out in the middle of the lake and low at the head of the lakes the pressing down of the column of air out in the middle of the lake causes a rise of the water at the end, and the rise amounts to as much as a foot in some places, like the south end of Green Bay where the bay narrows to a V point, and I think a little less at the west end of this lake. These three things can be told apart because you can measure the air pressure; for the last one you can discover the direction of the wind for the so-called wind tide, and you can keep account of the

time and know the position of the sun and moon in relation to what we call the true tide.

Q. Are any of these various phenomena that you have mentioned,—have they any influence upon the waters of the Bay of Superior or the Bay of St. Louis?

A. Yes, sir. The one that has the most influence, of
507 course, is the so-called wind tide which upsets the normal outward flow of current through the Superior entry and the Duluth entry.

Q. The effect of the wind would be quite perceptible clear up the St. Louis Bay if the wind blew strong enough?

A. I don't know how far up but piling up of the water in this whole western end of the lake beginning way out beyond the Apostle Islands would naturally result in a rise of the water in this estuary.

Q. Would the barometrical pressure also have an influence upon the water in the bay?

A. Yes, that is because the water levels arise when there wasn't any wind blowing.

Q. What about what you call the true tide; is that noticeable in the bay?

A. I am told that it is. I have never seen it, but it is a very delicate matter to measure because you have to take into account the complication of the other two when you measure and then compute when the moon would cause the big tide, but I am told that that has been carefully computed by the United States Coast & Geodetic Survey.

Q. You say that tide amounts to about three inches in the lake?

A. Yes, sir.

Q. Does it amount to about the same thing in the bay?

A. I suspect that three inches mentioned is in the bay rather than the lake.

Q. You are familiar with the geological writings of President Van Hise of the University?

A. Yes, sir.

Q. Have you familiarized yourself with his work on the
508 formations of iron ore, which I think he terms the theory that Mr. Merritt referred to in his testimony as the trough theory?

A. You mean the basin theory?

Q. Basin theory.

A. Yes, sir. I know it as it is explained by geologists. My own special line of work is not the study of iron ore but I know it is accepted by geologists.

Q. Did you read Mr. Merritt's testimony in this case with reference to what he called the trough theory and in which he stated that about ten years after his discovery of the trough theory President Van Hise published the theory and gave it the name of the basin theory?

A. Yes, sir.

Q. You may state whether or not the so-called basin theory, as

expounded by President Van Hise, is anything like the theory that Mr. Merritt described?

A. Doesn't resemble it in any respect whatever.

Q. What is the basin theory?

A. If the iron ore that Mr. Merritt alluded to was this of the Missabe Range. It is that there was laid down in the sea a deposit not dissimilar to limestone. It contained a great deal of quartz and a small amount of iron, and as iron ore it is worthless because the percentage of iron was too low. After a long, long period the action of underground water on that deposit the quartz was removed. The iron, therefore, not increased in amount but increased in percentage, becomes commercial ore, and it was oxidized during that period. The reason that the underground water could perform that work of carrying away the quartz and oxidizing the iron was that
509 there was below this iron ore an impervious bed of quartzite through which the underground water could not penetrate. The underground water therefore circulated along through this iron formation, removing the quartz from part of it, making ore of it, and left the rest of it in its original condition. That is the essential part of the explanation of the origin of the Missabe iron ores.

Mr. Bailey: According to Van Hise.

The Witness: Yes, sir.

Q. Now, how does that theory differ from what Mr. Merritt described as his trough theory?

A. Mr. Merritt's trough theory I understand to be that the waters of the ocean carrying iron came in contact with ice, and thereafter deposited the iron.

Q. What have you to say about the feasibility of that theory?

A. It wouldn't work.

Q. Why not?

A. In the first place, we don't know of any water carrying the iron in such quantity that when the iron was precipitated it would make ore. In the second place, we know that this ore was made a good many million years before there was any ice around; and in the third place, you have present there a part of the original deposit from which the iron ore was really made.

Q. So that there is no similarity whatever between the theory put forth by Mr. Merritt and the theory that is known as President Van Hise's basin theory?

A. Absolutely none.

Q. How long were those points in forming, according to your judgment?

A. Many thousands of years. It is hard to make a very
510 specific statement about that. Do you care to have me go into that?

Q. Yes.

A. We know from the Meade chart and the modern charts that between 1861 and the present time the modification has been trifling. That is fifty years. We know that the time when the glacier went away was perhaps 30,000, perhaps 80,000 years ago, and that the points were made after that. Our experience since we came here

or since people came here and made maps shows that in fifty years a very trifling accretion has been made; but as to whether it took the whole 50,000 or 30,000 years to make the points or not I couldn't state positively.

Q. Do you think that these points were here substantially in their present form say a hundred years ago?

A. Absolutely.

Q. In substantially the form we now see them?

A. I would just as soon say a thousand years.

Q. I ask you to look at page 456 of the volume entitled "Geographical Survey Monograph 52, Geology of Lake Superior Region." Do you see a map on that page?

A. Yes, sir.

Q. What is that a map of or what does that map represent?

A. That represents the region around the head of the lakes as I conceived it was at the Nippesing stage of Lake Superior.

Q. Do you know who made that map?

A. I made that map.

Q. And that, you say, represents your idea of the head of Lake Superior at the Nippesing stage?

A. Yes, sir.

Q. What is the Nippesing stage and when was it?

A. Nippesing stage was the last stage of the Great Lakes before the present. It is the time when the waters of the Great Lakes went down the Ottowa River from the east end of Lake Huron
511 instead of down the present St. Lawrence River.

Q. There was a time when the waters went down the Huron instead of the St. Lawrence River, was there?

A. Yes, sir.

Q. Can you give any estimate of how many years ago that was?

A. I will state 30,000 years, just to give a general figure at least 30,000 years ago.

Q. And on this map you have indicated the St. Louis River before it was submerged?

A. Yes.

Q. Now I will show you Wisconsin's Exhibit numbered 2, and I will ask you to state whether or not that is a correct photographic copy of the map found on page 492 of the work to which I have just referred?

A. No, sir. Page 456.

Q. I mean page 456. It is an exact copy of page 456 that I have referred to?

A. Yes, sir.

Attorney-General Owen: Offer Exhibit numbered 2 in evidence.

The Commissioner: There being no objection, it will be received.

Q. Now, Professor, I refer you to page 457, of the same work. What map is that on that page?

A. That is a map of the head of the lakes as they are today.

Q. Who made that map?

A. I compiled that map. What I mean is I traced the outlines from an existing lake survey chart of the United States Lake Survey.

Q. It is a map prepared by you, then, is it not?

A. Yes, sir.

Q. And represents the head of Lake Superior as it exists today?

A. Yes, sir.

512 Q. I show you Wisconsin Exhibit number 3 and ask you if that is a correct copy of page 457 of the work just referred to?

A. Yes, sir.

Attorney-General Owen: I offer exhibit number 3 in evidence.

The Commissioner: Received without objection.

Q. Now, Professor, the difference between the map on exhibit number 2 and exhibit number 3, showing the mouth of the St. Louis River, is due to the submergence of the river by tipping of the earth in this locality and the consequent backing up of the water, in your opinion; that's right, is it?

A. Yes, sir.

Q. Now are these maps part of an article written by you and appearing in that work?

A. Yes, sir.

Q. What is the name of the article and between what pages will it be found?

A. It is a chapter in this book on the geology of the Lake Superior region, chapter 16; title of the chapter, "The Pleistocene," pages 427, 459.

The Commissioner:

Q. Is that an official publication, Professor?

A. Yes, sir.

Q. Gotten out by whom?

A. United States Geological Survey.

Q. In what year was it published?

A. 1911.

Q. You wrote that chapter?

A. Yes, sir.

Attorney-General Owen:

Q. Under what auspices did you write that? Were you in the employ of the United States Geological Survey?

A. I was in the employ of the United States Geological Survey. The work was done in 1907 for the United States Geological Survey.

513 Q. And that work was issued by the United States Geological Survey?

A. Yes, sir.

Q. And is an official publication of the United States Geological Survey?

A. Yes, sir.

Cross-examination.

By Attorney-General Smith:

Q. How deep is the lake over what you call the ground river bed?

A. The water in the ground channel is twenty to thirty feet deep, I believe.

Q. And do you put that as the entire depth of the water of the Lake Superior which was pushed back over the St. Louis River between the time when the first map, Exhibit 2, is a correct map of Lake Superior and Exhibit 3 is a correct map of Lake Superior?

A. I think it represents the maximum depth. It was shallower at first.

Q. As a matter of fact, wasn't the setting back of Lake Superior over the old St. Louis River more than fifty feet in depth?

A. I don't know just how to get at that because——

Q. Well, I will add to the question. As a matter of fact, prior to the time of the setting back of Lake Superior over St. Louis River the St. Louis River was a good deal deeper down, of less altitude above sea level than at the present time?

A. Yes, sir.

Q. As a matter of fact, isn't the present altitude of St. Louis River at Fond du Lac over fifty feet above what it was in that vicinity prior to the time of the setting back of the lake?

514 A. I don't believe it is anywhere near as much as that.

Q. Did the stone formation above Fond du Lac exist prior to the time of the tilting of the land at the east end of Lake Superior?

A. Yes, sir.

Q. And there were then falls a good deal more extensive in the vicinity of these sandstone rocks than have been since?

A. I think they are about the same. The falls, as I understand it, were made when the glacier, the continental glacier went away. The St. Louis River was shifted a little bit here and there and at certain places it was moved out of its particular glacier valley, and set down on ledges. This made the falls.

Q. Wasn't the first effect of the passing away of the glacial part and the ice to raise Lake Superior something like 400 feet?

A. Yes, sir.

Q. And then the first movements of this land at the east end of Lake Superior was—become depressed, wasn't it?

A. Not for a long, long time. First of all, the level of the waters kept falling as lower and lower outlets were uncovered. That is the waters from the end of the lake.

Q. There was some thousands of years at the east of Lake Superior was some 400 feet higher than it is now?

A. Yes, sir, many thousand.

Q. Now that continued to sink for some years, some thousand years?

A. The water level continued to sink.

Q. Then there became afterwards a rising of land somewhat in the same vicinity where there had been a falling of land
515 prior to that time, wasn't there?

A. No, sir. My understanding of the situation is that there was for a long time no change in the level of the land. Our lake, which was 4 or 500 feet deep, was lowered and lowered as new outlets were uncovered with the retreat of the ice of the glaciers.

Q. And continued until it was considerably lower than at the present time?

A. Yes, sir; then the land rose.

Q. Then at that time there was a very extensive rising of the land, which included not only land east of Lake Superior but also land in southern Michigan and Northern Illinois?

A. Yes, sir.

Q. Now was that rise the same ledge, as it might be called, as the rise at the east end of Lake Superior?

A. I think it was the same rise.

Q. Prior to that time Lake Michigan ran into the Mississippi River, didn't it?

A. Yes, sir.

Q. And the boundary line practically between the basin of Lake Michigan and the basin of Lake Huron was where Mackinaw is now?

A. I should think so.

Q. And the waters above the rise became what it is now—the present changes took effect geologically, ran down through Lake Superior and upper St. Mary's River and across into Georgian Bay and over by Lake Nippesing down the Ottowa River?

A. Yes, sir.

Q. And the waters from Lake Erie and Lake Ontario went down the St. Lawrence River?

A. Yes, sir.

Q. Now when this land began to tilt near St. Mary's River, in that vicinity, how far east did that tilting process go on?
516 A. It occupied all the northeastern corner of this continent.

Q. But it didn't go over around Lake Nippesing or the Ottowa River?

A. Yes, sir, there too.

Q. How far east, to Montreal?

A. All the way around the Labrador coast where we have elevated ocean beaches that are tilted.

Q. Was the same tilting process going on at the east end of Lake Superior but not at the west end, extending to Labrador?

A. Yes, sir.

Q. Did that affect the St. Lawrence River materially?

A. Yes, sir.

Q. It didn't shut it off so as to turn the flow of the St. Louis River down through New York, where the Erie Canal is now?

A. No, but it shifted from the Ottowa to the St. Lawrence.

Q. That shifting from Ottowa to the St. Lawrence was done in the vicinity of Georgian Bay?

A. Yes, sir.

Q. Now the map of Lake Superior that you have in the book represents a definite western shore not pointed in character but somewhat oval?

A. Yes, sir.

Q. Now will you tell where that oval west shore of Lake Superior was with reference to the present Minnesota Point?

A. I think it was between Minnesota Point and Rice's Point, as near as I can tell.

Q. Wasn't it west of Rice's and Connors Point?

A. I don't think so.

Q. Have you any means of telling the exact depth of the sunken and drowned St. Louis River below the surface at the time that map was supposed to be made, I mean at the time referred to by the map?

A. Very closely; that is, we have this tilted shore line and
517 the tilted shore line of the Nippesing stage, and we find along the north coast of Lake Superior, east of Grand Marais and at Grand Marais, or thereabouts, it goes under. Now, assuming it kept tilting at the same rate that the visible tilt is, it should be about 25 feet below the present lake level of Duluth; and when we get well records at Duluth, as I did when I was working on this in 1907, we find a layer of gravel underneath the harbor about 25 feet below the waters' surface; so that looks as if that identified the shore line of Lake Nippesing, about 25 feet below this.

Q. You don't mean Lake Nippesing; you mean Lake Superior at the time of the Nippesing stage?

A. Yes; I mean Lake Superior at the time of the Nippesing stage.

Q. Now there are places in what you call upper St. Louis Bay there deeper than that, aren't there; soundings show considerable more depth of water?

A. Yes, sir.

Q. Now wouldn't this indicate where that original St. Louis River ran?

A. I think they do.

Q. Do you know where Pokegama River rises?

A. In a general way.

Q. About where?

A. Why, in a southerly direction I guess 25 miles from here.

Q. Isn't it 60 miles?

A. I don't know, sir.

Q. Isn't it near where Moose Lake, Minnesota, is?

A. I can't answer that.

Q. Where is the mouth of Pokegama River?

A. I should say it was where Pokegama Bay joins the larger tributary.

518 Q. It isn't a rule necessarily that the mouth of a river is where it joins a larger stream, is it?

A. I think it is.
Q. Is the Missouri popularly known as having a mouth?
A. Yes, sir.
Q. At the Gulf of Mexico?
A. No.
Q. It joins a smaller stream?
A. It has a mouth where it joins the Mississippi.
Q. The Mississippi is a smaller stream?
A. It's a shorter stream.
Q. And less volume, isn't there, the average of the year?
A. I am not sure about that.
Q. The Pokegama River runs down the Superior Entry—the water of it?
A. The water from the Pokegama River does, but I wouldn't think of calling that Pokegama River.
Q. Well, isn't it a fair proposition that so far as the blue water of Lake Superior sets back, that so far you are not entitled to call it a river?
A. No, sir.
Q. Isn't one of the tests of the river recognized among scientists that it must be a body of water running only in one direction?
A. Not without exception, sir.
Q. The ordinary definition?
A. The Hudson River rises at Troy, 450 miles from the ocean. We call it the Hudson River clear down to New York.
Q. You don't call it clear through Hudson River to the ocean?
A. Clear to the ocean.
Q. There is the North River, isn't there, and then isn't
519 there the Narrows, and then isn't there a bay besides?
A. Yes; but I should say that those were supplementary names applied to the lower part of the Hudson River.
Q. Why wouldn't any stream that comes in and runs continuously to the ocean without joining any very materially larger body of water be considered a stream to that point, at least to a fractional extent?
A. I think it would be called by the name of the larger stream, down to its mouth.
Q. There is a Little Pokegama River, isn't there?
A. I believe so.
Q. And that also runs out through Superior Entry?
A. I wouldn't say that the Little Pokegama River does. I wouldn't say that its water goes out in the St. Louis River.
Q. Well, as a matter of fact, isn't there more water in a year runs in through the distance between Connors Point and Rice's Point than there runs from the St. Louis River by Fond du Lac?
A. I think a little more.
Q. Isn't it also the fact that when that runs through there it runs through with a greater speed than is ordinarily attained by the river coming down by reason of the winds and to some extent, not so much, tides that you speak of?
A. I think so, at times.

Q. Have you noticed the Meade map?
A. Yes, sir.
Q. You find some small spots in St. Louis Bay that are deeper than any land around there, don't you?
A. Yes, sir.
Q. How do you explain those?
A. Those are parts of the drowned channel of the St. Louis River.

520 Attorney-General Owen:

Q. In other words, those were holes that were in the land before the river was submerged, and they are still there?
A. Those were holes in the bottom of the river channel.

By Mr. Fryberger:

Q. Now, Mr. Martin, did I understand you to state that the St. Louis River had nothing to do with the forming of the bars, Rice's Point and Connors Point, and also Minnesota Point?
A. Had nothing to do with supplying material to form the bars. It may in a very trifling way have modified the bars at the entry.
Q. Just a trifle?
A. Yes, sir.
Q. Well, don't you think it was the action of the waters coming down the current of the St. Louis River meeting the waves of the lake that caused these bars?
A. No, sir.
Q. One neutralizing the effect of the other?
A. No, sir.
Q. Absolutely nothing of that kind?
A. No, sir.
Q. Did you ever hear that theory advanced?
A. Yes; I have read it in the testimony in this case.
Q. That is the only time?
A. Yes, sir.
Q. Now which was formed first, Grassy Point or Connors Point?
A. Grassy Point.
Q. Then next came Connors Point and Rice's Point?
A. Yes, sir.
Q. And then last of all came Minnesota Point and Wisconsin Point?
A. Yes, sir.

Q. Do you know whether or not there is another bar form-
521 ing at the present time beyond Minnesota Point?
A. There doesn't seem to be any very definite suggestion of it on the Lake Survey chart.
Q. You wouldn't expect that to show in 25 or 30 years in a very pronounced manner, would you?
A. No, but I wouldn't think of suggesting that one was forming unless I could see some positive evidence of it on the map or by going and looking at the lake.

Q. Now, Mr. Martin, these bars were formed in your opinion solely by the action of the waves?

A. And the along-shore current.

Q. Don't you know that along every river, practically every river along the lake bars form at the mouth of every river, along Lake Superior?

A. Yes, sir.

Q. Why is it these bars form in front of these rivers?

A. Because the river has been drowned, made into an estuary, and that is the kind of place where waves and the along-shore currents can make a sand-bar.

Q. Why don't they make a sand-bar right out here ten miles up the North Shore?

A. Because the rivers on the North Shore were not drowned. The stream at Lester Park, for instance, comes down a steep slope directly into the lake and there isn't the kind of situation where a sand-bar can be built.

Q. Lester River comes down from a ravine practically the same as the St. Louis River, doesn't it?

A. Yes, sir.

Q. Why do you say one is drowned any more than the other?

A. Because the Lester River keeps coming down until practically the minute it gets into the lake, and the St. Louis River does
522 that as far as Fond du Lac, and then has this additional length which is of a different character.

Q. Well, if the lake formerly extended up to Fond du Lac, up to the rapids, then the St. Louis River came in to the lake in exactly the same way as the Lester River comes into the lake?

A. That would be true if the lake ever extended up there.

Q. I am asking you now to assume.

A. Yes.

Q. So if the lake did extend up to Fond du Lac, where Fond du Lac now is, the St. Louis River came into the lake the same way that these North Shore Rivers do now; isn't that true?

A. Yes, sir.

Q. This Lester River is a very small river, is it not?

A. Yes, sir.

Q. In comparison in volume with the St. Louis River?

A. I think it is very much smaller.

Q. A mere creek, as a matter of fact, isn't it?

A. Yes, sir.

Q. Goes nearly dry in the summertime, and yet isn't it a fact that a bar forms in front of that little stream?

A. Yes, there is a little bar there.

Q. Now, did you ever testify as an expert before, on geological questions?

A. No, sir.

Q. Never were called before?

A. No, sir. Before my scientific associates, but not into court.

Q. Are these matters that you were telling us about here today matters of fact or are they matters of your opinion.

A. They are matters of common agreement among men in my profession.

523 Q. Do you think that these matters that you have testified to here today are so well settled among geologists and geographers that you have spoken of that there will be no reputable men to dispute you on your opinion?

A. No, sir.

Q. There will be no dispute?

A. Yes, sir.

Q. That is, you claim that is so well settled, the things you have said here about this lake, about these periods of time and of formation of these bars, are so well settled that no reputable geologist will dispute you; is that your position?

A. Yes, sir, absolutely, subject to little qualifications that I have made about approximate periods of time.

Q. Do you mean to say that it is so well settled among geologists that the lake never extended as far as Fond du Lac at a former time that we can't get an expert to testify to that fact?

A. Yes, sir.

Q. Can't find one?

A. Yes, sir.

Q. Now you never made one of these surveys from which these maps were made?

A. No, sir.

Q. You took other men's words for it?

A. Yes, sir.

Q. How deep do you say Lake Superior was here at the time it was the deepest?

A. Between 4 and 500 feet.

Q. That is at Duluth and Superior?

A. Yes, sir.

Q. Do you mean 500 feet on top of the surface of the ground where we are now?

A. Yes, sir.

Q. Then where would the St. Louis River come into the lake under those conditions?

A. Away back miles above Fond du Lac.

Q. How far above Fond du Lac?

A. Probably ten miles anyway.

524 Q. Now you are just guessing, aren't you, on that?

A. I am estimating.

Q. Just guessing; you have no way of estimating that?

A. I could take the elevations, of course, and put my finger in the exact place.

Q. How long did the river enter into the lake at that point, ten miles above Fond du Lac, for how many thousands of centuries, in your opinion?

A. I would rather not state that in years.

Q. I don't care for a few cycles.

A. It was for a small part of the closed stage of the glacial period.

Q. Just give us your estimate now of what this period was. We are trying to get some facts here.

A. The period it went in there?

Q. Where it emptied into the lake ten miles above Fond du Lac?

A. Several thousand years.

Q. When did it cease flowing into the lake at that point; when was it extended further down?

A. When it flowed in there the waters from the lake drained through the divide between the Brule River and St. Croix into the Mississippi, and the water level fell when the glacier retreated around Kenewa Point somewhere, so that the waters could drain down to Chicago and down the Mississippi that way.

Q. Read the question, Mr. Reporter. Question read by the Reporter as follows: "When did it cease flowing into the lake at that point; when was it extended further down?"

Q. Answer the question. I ask you when?

525 A. When the level of the lake fell.

Q. When did the level of the lake fall?

A. A good many thousand years ago.

Q. You can't tell when?

A. No, sir.

Q. Can't you give us an estimate?

A. 30 or 40,000.

Q. As a matter of fact, this whole theory is a vast speculation, isn't it?

A. No, sir.

Q. It isn't?

A. It is based on as exact computations as we can make.

Q. Yes, as exact computations as you can make; but what is considered an accepted theory one decade is completely changed in another, isn't it?

A. No, sir.

Q. There is a great change going on all the time, isn't there, in the study of geology, making advances, getting new theories all the while?

A. I think we are making progress, but I don't think we are overturning a great many theories.

Q. Don't think you are?

A. No, sir.

Q. You seem to think the testimony of Mr. Leonidas Merritt about the formation of these iron ore bodies was ridiculous?

A. I wouldn't want to say that about a nice old gentleman like Mr. Merritt. I don't think they are true, but I wouldn't say they were ridiculous.

Q. They didn't impress you at all, did they?

A. No, sir.

Q. As a matter of fact, you don't claim that you geologists can examine the ground, the formation and surface of the ground, and find where merchantable iron ore is deposited, do you?

526 A. Yes, sir.

Q. Why was it that that wasn't found, the Missabe Range

of ore deposits wasn't located by you geologists instead of these lumber jacks like Mr. Merritt?

A. It is done by geologists, prospectors and by geologists.

Q. Do you know of any iron ranges up in this locality of Minnesota, Michigan and Wisconsin that were located by a geologist instead of one of these explorers, just one?

A. Yes, sir.

Q. What one?

A. Penokee and Gogebic Range.

Q. Who located that, what geologist?

A. It was located very accurately by R. D. Irving.

Q. Was he the first man that found iron there?

A. I don't think he was the first man that found iron, but he went over the ground and outlined the position of the ore body.

Q. Do you know Mr. Winchell?

A. Which one?

Q. The one that is connected with the University of Minnesota?

A. N. H. Winchell, yes, sir.

Q. There were two Winchells, were there, father and son?

A. There were two Winchells that were brothers and then N. H. Winchell has two sons that were geologists.

Q. Do you remember the Winchell that had to do with the Missabe Range?

A. That was N. H. Winchell; he was State Geologist of Minnesota.

Q. He was a man of good reputation?

A. Yes, sir.

Q. A well-known recognized authority on geology?

A. Yes, sir.

Q. Instructor and professor in the University of Minnesota?

A. Yes, sir.

527 Q. Don't you know that he published a work after he examined the Missabe Range that iron ore couldn't exist on that range in merchantable quantities on account of the formation, and condemned it completely?

A. No, sir.

Q. Never heard of it?

A. No, sir.

Q. It's a surprise to you; you never heard that?

A. No, sir.

Q. How long have you been a geologist in this country?

A. Taught geology eleven years.

Q. How long have you been studying it?

A. Oh, about 20 years.

Q. Have you ever studied the Missabe Range at all?

A. I visited the Missabe Range, but of course my own special branch of geology, as I told you, is not iron ore, so I haven't studied it as Leith and Winchell and the other geologists studied it.

Q. But you want to say that you never even heard that Mr. Winchell made that report and made that statement and he had to admit it was wrong, years afterwards?

A. Yes, sir.

Q. Never heard of it?
A. No, sir.
Q. You are well acquainted with the geologists of this locality?
A. Yes, sir.
Q. You have seen Winchell's report?
A. Yes, sir. He published 24 annual volumes—7 big folio volumes, and I certainly didn't read every word he wrote.
Q. I asked you if you ever saw that report?
A. No, sir.
Q. Never heard of it?
A. No, sir.
Q. Now you know what we are trying here, do you, Mr. Martin?
A. Yes, sir.
Q. What is it?
A. Trying to locate the boundary between Wisconsin and
528 Minnesota.
Q. Now in any investigations that you have made you never located that boundary in any way, have you—that boundary line?
A. Why, I haven't marked it. I have made up my mind where it seems to me it justly belongs.
Q. I say, you never found it, you never found any evidence of the boundary line yourself?
A. You find it on the charts.
Q. Oh, yes, these charts that are in evidence, things of that kind. Did you make any surveys of any kind with reference to this boundary?
A. No, sir.
Q. You know nothing about that?
A. No.
Q. Know nothing about the surveys that were made except as you see them on the charts?
A. Just on maps and charts.
Q. Now this official publication that you speak of, to what extent is that an official publication of the United States Government; that is, this Geological Survey?
A. It is published by the Bureau in the Department of the Interior and printed by the Government Printing Office.
Q. Well, but it is made up by men like yourself, that they hire to go out and get this data; isn't that true?
A. Yes, sir.
Q. And you get your data not from actual surveys but from other maps that you find; isn't that true?
A. No, sir. I get some things from maps and I get many other things from investigations on the ground.
Q. I understand, but you didn't get all your report there from investigation?
A. No, sir.
29 Q. And isn't it a fact that in compiling this report that these men that write these articles, men like yourself, get information from any source that they deem reliable?

A. From reliable sources.

Q. Well, that they deem reliable. Sometimes they are mistaken, aren't they?

A. Yes.

Q. Yes, sometimes their information isn't correct; isn't that true?

A. Yes, sir.

Q. So it is compiled by men that are using their judgment as to where they get their information, as to what information they shall use; isn't that so?

A. It seems to me it describes all sorts of work.

Q. That's true, isn't it?

A. Yes, sir.

Q. When was Wisconsin admitted to the Union?

A. Between 1840 and 1850.

Q. We are not talking now of cycles of geology. What was the year. We allowed you latitude of three or four million years on that. We can't allow you that.

A. I think it was about 1846 or 1848.

Q. It was 1848, wasn't it?

A. I don't know.

Q. You don't know as to where that river was at that time in 1848 of your own knowledge?

A. Yes, sir.

Q. You do?

A. Yes, sir.

Q. Do you know where the channels were?

A. Not every channel, no, sir.

Q. You got your information as to where those channels were after you saw Meade's chart; isn't that true?

A. Yes, sir.

530 Q. And the rest of the charts?

A. Yes, sir.

Q. What you know about it is what you have learned from these charts?

A. And from the river.

Q. You never made any soundings?

A. No, sir.

Q. Now you speak of this St. Louis Bay and Superior Bay being an estuary. What do you mean by that?

A. An estuary is a drowned river valley, very often it is a small river drowned and made navigable.

Q. Do you mean to say that in order that there be an estuary that there must be a drowned river?

A. Yes, sir.

Q. And how much of the river is drowned?

A. A part that is drowned is called the estuary.

Q. Just the part that is drowned is called the estuary?

A. Yes, sir.

Q. Is there any difference between an arm of the sea and an estuary?

A. Yes, sir.

Q. What is the difference?
A. There are many kinds of arms of the sea.
Q. Let's have some of them?
A. Well, there's a fjord.
Q. That's a Norwegian term?
A. Yes.
Q. I don't care about the different names in different languages. I want plain English here?
A. Well, there is a strait, an arm of the sea.
Q. A strait connects two larger bodies of water, does it not?
A. Yes, sir.

Q. What do you understand to be an arm of the sea; you
531 say there are many different kinds?

A. Some of the indentations where the sea penetrates the land are called arms of the sea.
Q. Don't estuaries answer the same definition?
A. Yes; but the two terms aren't equal. The Mediterranean Sea is an arm of the sea but it isn't an estuary.
Q. Nobody ever calls that an arm of the sea, do they?
A. Yes, sir.
Q. It is in common parlance called an arm of the sea?
A. Yes, sea.
Q. It is called Mediterranean Sea, isn't it?
A. Yes, sir.
Q. Always called the Mediterranean Sea?
A. Yes.
Q. As I understood you to say, the shores of this bay, St. Louis Bay, indicated to you that what we call St. Louis Bay is a river. I wish you would just state why the shores of this bay indicate to you that this bay is a river, all along the bay, what we call the St. Louis Bay. I will say do you know what we mean by upper St. Louis Bay and lower St. Louis Bay?
A. I think you divide them by Grassy Point, do you not?
Q. Yes. Now we will take above Grassy Point, and you define to us these shores and why these shores indicate to you that that body of water is a river above Grassy Point?
A. In the first place, you have the plan of the water body, the water here, that is to say, the main bay and its tributaries, and that plan has exactly the shape that you would get if you, for instance, drew a river and some branches in some clay and then poured in water; the water would back up into the branches and make
532 a branching estuary just the shape of this one. Then there are curves there. For instance, you have in mind that great curve around Spirit Lake,—curves of that kind are made in only one way in Nature, in such materials, namely by the river cutting against its banks, swinging in a great meander, and the St. Louis River could not have cut the thing in its present form when it was drowned such as it is now.
Q. That is your reason?
A. Yes, sir.
Q. Have you given all the reasons that you can think of?

A. The chief ones.

Q. Did you ever go up the St, Louis River beyond the rapids above the Indian Village above Fond du Lac? Did you ever ascend the river?

A. Only for perhaps a mile.

Q. The river banks of St. Louis River are very well defined as river banks all the way up, are they not?

A. Yes, sir.

Q. Just ordinary river banks. How wide?

A. A little wider than the stream.

Q. How wide is the stream?

A. Thirty feet, perhaps.

Q. It's a good deal wider than that, isn't it?

A. Above Fond du Lac?

Q. Yes, for miles and miles?

A. I haven't been up in that part of the river for ten years, sir.

Q. So you don't know. Now, as a matter of fact, upper St. Louis Bay has a very indented shore?

A. Yes, sir.

Q. And has all the characteristics of the shore of a lake? Isn't that true?

A. No, sir.

Q. Is there any difference between the shores of St. Louis
533 Bay and the south shore of Lake Superior?

A. Yes, sir.

Q. What difference just so far as indentations are concerned and the heighth of the shore.

A. Why, on the south shore of Lake Superior and the shore of any lake you have an exceedingly irregular outline that is determined by whatever was there before the lake came there, not by a regular stream cutting.

Q. Have you finished.

A. I was going to add one more sentence.

Q. All right.

A. Here you have the systematic outline that was caused by the drowning of the estuaries of the St. Louis.

Q. Now take upper St. Louis Bay. Hasn't it, as a matter of fact, more irregular and greater indentations on the shores of that bay on both sides than there is for a hundred miles down the south shore of Lake Superior?

A. Yes, sir.

Q. Then do you want to say now that the greater the indentations the greater the evidence of the river?

A. No, sir; depends on the ground.

Q. I understood you to say the greater the indentations the greater the evidences of a lake, is that true?

A. No, sir.

Q. Didn't you say that?

A. I didn't mean to say that.

Q. You said that the greater the indentations of the shore the more evidences of the lake; isn't that true?

A. I didn't mean to say that. I don't think I did.

Q. Well, as I understand it, the greater the indentation of the shore the more evidence there is that there is a river?

A. I think that is too broad a generalization to try to make. It has got to be a special sort of indentation before we say that
534 is evidence of a drowned river.

Q. A special sort?

A. Yes, sir.

Q. What do you mean by that, a special sort?

A. I mean such a form as we have along the shores of this bay where it is evident that you get this kind of indentation by drowning the tributaries of this river.

Q. You will admit that ordinarily where there is great indentations of shore line that isn't evidence of a river?

A. I wouldn't want to say that.

Q. Nor you wouldn't want to say the reverse, would you?

A. No, sir.

Q. You want to remain neutral on that?

A. I want to answer specific questions and not just generalizations. Would you allow me to make a suggestion?

Q. I will after I get through. Your counsel will ask you. You spoke about this drowned river and the upper and lower St. Louis Bay, looked to you like a drowned river,—you take the mouth of the Mississippi River, you have been down there, haven't you?

A. Yes, sir.

Q. There is no such drowned river down there running into the Gulf of Mexico, is there?

A. No, sir.

Q. Just a delta, several channels leading out into the gulf, and there we have the current of the river and the action of the waves in that Gulf of Mexico; we have no such bay as we have here at the head of the lakes, have we? How is that?

A. No, sir.

Q. You take where the Missouri River puts into the Mis-
535 sissippi, you have seen that, haven't you?

A. No, I have never seen that.

Q. You know that that flows right out down the Mississippi and they flow side by side, two currents, the one muddy and one comparatively clear for miles and miles?

A. I have been told that.

Q. No such thing as that here?

A. No, sir.

Q. As a matter of fact, haven't we here in St. Louis Bay and Superior Bay the ordinary case of an estuary or arm of the sea that we have along any number of lakes in the United States and any number of places along the shore of the ocean; isn't that about all there is to it?

A. I don't think we have.

Q. There are a great many places along the shore that look very much the same as this, isn't that true?

A. Yes, sir.

Q. Where the ocean seems to extend up into the land, and that is an arm of the sea and the river will put into the head of it?

A. Those are places where rivers have been drowned.

Q. You will concede this, won't you, that that river was drowned, if it was drowned at all, long before 1848, when Wisconsin was admitted into the Union?

A. Yes, sir.

By Mr. Bailey:

Q. Mr. Martin, the height of the land over which the river flows is very much greater up at Cloquet than it is down at Fond du Lac?

A. Yes, sir.

Q. Now, just suppose that the St. Louis River was diverted, we will say at Cloquet, and taken off, just suppose a case, down into the Mississippi, all the water taken off down there; the height of the waters in the Bay of St. Louis would still remain just ap-
536 proximately the same as they are now, wouldn't they?

A. Approximately, yes, sir.

Q. Precisely the same height clear up to the head of Big Island and above Big Island, same amount of water up there, be just the same amount of water there as there is now?

A. Not quite.

Q. Well, approximately?

A. Yes, sir.

Q. Did I understand you that in your opinion Minnesota Point and Wisconsin Point and Rice's Point and Connors Point were formed in the lake; did I understand that?

A. Yes, sir.

Q. And that you find a channel going out between the first pair and the second pair of points?

A. Yes, sir.

Q. Now, how far out does that channel extend into the lake?

A. Why, practically just beyond the end of the breakwater.

Q. Beyond the end of the breakwater?

A. Yes, sir.

Q. And I suppose you, in speaking of this drowned river, you think that if the waters of Lake Superior, for instance, could, from some cause which we cannot conceive now, be lowered suddenly fifty feet and the waters of the St. Louis River should still continue to flow, they would follow that channel out, wouldn't they, and they would be confined in very narrow banks?

A. Yes, sir.

Q. And much lower down than they are now?

A. Yes, sir.

Q. Probably several feet lower than the level of the bay as it is now?

A. Yes, sir.

Q. So that all of the water which is above the place which the waters of the St. Louis would then occupy, would be waters of the lake, wouldn't it, all that water?

A. No, I wouldn't say that the water that now flows
537 out——

Q. I am not talking about the water that flows out. I mean the height of the water, all that is above the top of the stream, if the lake were reduced fifty feet, all of that is in fact water of the lake?

A. No, not the part that's flowing out.

Q. No, not the part that is coming down the river but all that is above the water of the river?

A. With the exception of that——

Q. Are really waters of the lake?

A. Yes.

Q. As a matter of fact, most lakes, you might class them as drowned rivers if you wanted to?

A. No. There are many lakes that aren't that kind.

Q. Take a lake that has an inflow and an outflow, as most lakes do; that's true, isn't it, that they have an inflow and an outflow, inlet and outlet?

A. Yes, sir.

Q. Water flows in one end and out the other?

A. Yes, but——

Q. And it is just a matter of classification amongst you geologists as to whether you classify them as drowned rivers or lakes?

A. We make our classification on the basis of reason as to whether there is a current that goes through all this.

Q. There are currents in Lake Superior, aren't there?

A. Yes, sir.

Q. And you classify that as a lake?

A. Yes, sir.

Q. And there is a current in the St. Louis River?

A. Yes, sir.

Q. And you classify that as a river?

A. Yes, sir. There are different kinds of currents in the two waters. Currents in Lake Superior eddy round and round;
538 currents in St. Louis Bay flow straight through.

Q. Take it in what we call the Superior entry, there is a current right outside of that for miles distant, isn't there?

A. Yes, sir.

Q. And yet you call it the lake unquestionably as soon as you get beyond, I mean easterly, of the Superior entry?

A. Yes, sir.

Q. And that is the same current that you found in the bay?

A. Yes, sir.

Q. So that isn't quite a basis upon which you can classify exactly, is it?

A. No.

Q. You have given your opinion as to how Wisconsin and Minnesota Point and Connors Point and Rice's Point were formed, and you think they were formed in the same way?

A. Yes, sir.

Q. And you are inclined to think that Grassy Point may hav
been formed somewhat differently?

A. A little more complicated.

Q. But I take it that you think that Wisconsin and Minneso
Point and Rice's Point and Connors Point were formed in the lak

Q. Why, Rice's and Connor's Points were formed at the end
the lake.

Q. Well, in the lake?

A. At its shore, yes.

Q. And likewise——

A. And these points built out into the lake there.

Q. And likewise Wisconsin and Minnesota Point?

A. Yes, sir.

Q. Formed at the end of the lake?

A. Yes, sir.

Q. And you say that the Grassy Point, formation of that, is som
what complicated?

A. Yes, sir.

539 Q. And you wouldn't undertake to say very definitely
to that?

A. I meant to make a fairly specific statement about it in th
earlier part of my testimony.

Q. But you found the very same material there as you found o
the other points?

A. No; found very different material along there.

Q. It has been formed longer?

A. It is a different kind of material.

Q. It has been formed longer?

A. Very likely.

Q. Just as Connors Point and Rice's Point were formed earli
than Wisconsin and Minnesota Points?

A. Yes, sir.

Q. Referring to this page 457 of this monograph that you hav
introduced a map from and which you say you wrote, I find thi
statement: "Between the head-lands beaches have been formed an
these beaches are of the usual sand and gravel and boulder type a
sociated with spots, hooks, bars, and sand dunes. In places wher
such beaches have been built across the mouths of valleys or bay
and separated them from the lake, ponds have been held in as o
the south shore of Lake Superior or the east shore of Lake Michiga
near Grand Traverse Bay, where some very large ponds of this so
are found. Elevated examples of these ponds were observed by C. R
Van Hise and J. M. Clements in 1901 on the north shore of Lak
Superior along the Black Bay coast, forming a peculiar type of lake
associated with the raised beaches." These beaches that you wer
talking about here are formed much in the same way as Wis

540 consin and Minnesota Points and Connors and Rice's Point
aren't they?

A. Except that the stream in the case of those little ones wasn
able to keep the channel through the broad bar.

Q. What you are talking about here are lakes that were formed

that didn't have an inlet and an outlet sufficient to keep the channel through, that is the only difference?

A. Yes, sir.

Q. And going on reading: "In the Michipicoten District a bar of this kind was thrown across the bay now occupied by Wawa Lake at the time of one of the highest lake stages as described by A. P. Coleman." That lake formed in the same way,—same kind of a bar?

A. Yes, sir.

Q. So that you take these, what we are speaking of as bays here, if there wasn't any St. Louis River there would be a lake there just the same as these lakes you speak of?

A. Yes, sir.

Q. And the only reason that you suggest for now calling that body of water a river instead of a lake is because there is an inlet and an outlet.

A. Yes, sir.

By Mr. Fryberger:

Q. You are familiar with Narraganset Bay?

A. Yes, sir.

Q. And the river that puts into the bay?

A. I don't know the name of the river.

Q. Providence River, isn't it?

A. It is the river at Providence.

Q. Now, that is a case of a drowned river, Narraganset Bay, isn't it?

A. Yes, sir.

Q. Did you ever hear of anybody calling the mouth of
541 Providence River out where Narraganset Bay joins the ocean—never in your life, did you?

A. There is no current out that far.

Q. Just answer my question?

A. No, sir.

Q. The mouth of Providence River is where it strikes the first point of Narraganset Bay, isn't it?

A. Yes, sir.

Q. Isn't that bay a case of the drowned river?

A. (No answer).

By Mr. Hanitch:

Q. If I understand your theory, you think that some 80,000 years ago the lake was about four or five hundred feet higher than it is now?

A. Yes, sir.

Q. And that the St. Louis came into the lake about ten miles above the village of Fond du Lac?

A. Yes, sir.

Q. And then the ice moved so that there was an opportunity for

the waters to flow out and the waters of the lake receded, and receded until finally this land that is now covered by St. Louis Bay and Superior Bay became dry land, and the St. Louis River meandered through that dry land into the lake?

A. Yes, sir.

Q. And that was perhaps 30,000 years ago, and then the land tilted down the Soo and brought the waters of the lake back over this dry land up as far as perhaps the falls above Fond du Lac; is that right?

A. Yes, sir.

Q. And about what depth of the lake water was there then over this dry land where the St. Louis and Superior Bay is?

A. It gradually increased until it is what it is now.

Q. You don't think it is more than what it is now, at some time?

A. No, not essentially.

542 Q. I thought I understood you to say that the gravel deposit indicated where the lake bottom was when it came back?

A. Yes; I said that the gravel deposit——

Q. Now assuming——

Attorney-General Owen:

Q. Did you give all the answer you wanted to there?

A. I could add to it. The gravel deposit that we have there is the tilted shore line of this Nippising stage that goes down under the water at Grand Marais.

Q. But the same deposit reaches up here, does it not?

A. I think that's a different gravel. There are a great many other gravels underneath this.

Q. Assuming that on Minnesota Point that gravel deposit appears to be forty feet under the present sand over there, would you say that that indicated where the bottom of the lake was when the tilting of the land brought the waters back?

A. No, I don't think—I think that's true. There's a great series of gravels and clays, gravels and clays that go down underneath the earth for several hundred feet.

Q. When the waters of the lake were brought back across this great flat which is now covered by the St. Louis and Superior Bay, how deep would you say the lake was across these flats, deeper than it is now?

A. I am not sure that I understand your question. Would you mind stating it again.

Q. As I understood you, the water receded until the lands which are now covered by the Superior and St. Louis Bay came out

543 and were dry land?

A. Yes, sir.

Q. And then the St. Louis River meandered down through that flat into Lake Superior?

A. Yes, sir.

Q. Now about 30,000 years ago your judgment is that land

began to tilt at the northeastern end of Lake Superior and brought the waters back so they again flooded this flat, is that right?

A. Yes, sir.

Q. Now, of course, the waters were brought back gradually. How much of depth do you think the lake had across these flats when it came back?

A. Why, it probably didn't have more than 25 feet.

Q. At that time it was simply then a wide expanse of water of a depth of about 25 feet with the St. Louis River defined concisely in its channel, the banks at about what we call the village of Fond du Lac or a little above Fond du Lac?

A. It was essentially as it is now.

Q. No, because you testified that these points were all made after the waters came back?

A. Below, yes, above here it was essentially——

Q. That is, the river appears as it appears now above the village of Fond du Lac and the rest of it was a mere expanse of water about 30,000 years ago?

A. Now, as soon as the land began to tilt the waters began to back up, and first they widened the river a little bit, and kept widening it more and more until it was essentially as it is now except that the outer points were not yet built.

Q. What do you call the outer points?

A. Rice's Point, Connors Point, Minnesota and Wisconsin Points.

544

Q. What about Grassy Point?

A. Grassy Point seems to me to be a spur on the side of this drowned estuary.

Q. The waters of the lake did, as I understand you, about 30,000 years ago, come back and fill this flat?

A. They didn't fill it as much as it is now.

Q. They filled it as much as it is now and also filled that part that is covered by these points of land that you speak of?

A. Yes, sir.

Q. It was after this water came back that these points of land began to form?

A. Yes, sir.

Q. So that the only difference between this flat now and 80,000 years ago is that 80,000 years ago there was 400 feet of lake water on this flat and today there is about 25 feet of water, with some points in it now that weren't there before, is that right?

A. There seems to me a vast difference——

Q. It is just the difference in depth of water, is it not?

A. That is the only difference.

Q. It is lake water just as it was 80,000 years ago?

A. No, sir, I wouldn't say it was lake water.

Q. It is the water that was pushed back out of Lake Superior over these lands, the same water that receded out of Lake Superior and made it dry, is it not?

A. No, sir. It is the water that flows down from the St. Louis River that is unable to get out into the lake as fast as it would like

to because the lake waters are tipped up here, and it is river water that is out in this estuary.

545 Q. River water out in the lake too, is it not?

A. Yes, sir.

Q. Very often there is lake water in on these flats, perfectly blue clear water, is there not?

A. There is lake water a little bit coming in here but——

Q. Now, as I understand you, these pits that we see in various parts, that we see by the chart and the soundings in various parts of this great flat are old pits that were dug out by the St. Louis River some time between 80 and 30,000 years ago; is that right?

A. Yes, sir.

Q. And since the water has come back by the tilting there has been no digging by the river, has there?

A. No. There has been some digging since.

Q. Don't you think there has been filling and not digging?

A. I know there has been some digging.

Q. How would you account for these low spots and these pits, if there hadn't been filling and not digging?

A. Because the line of the low spot is largely the shape of the submerged channel in the estuary.

Q. That was dug out when the land was dry?

A. Not altogether.

Q. Do you think that if we have had 20 feet of water here there has been any current to dig this soil underneath?

A. Yes, sir. That is demonstrated on the Meade chart.

Q. Let me understand you. I thought you said that the deep holes that appear on the Meade chart were holes that were the channel of the river when the land was dry?

A. Yes, sir.

Q. Since the waters have come back and recovered this

546 land with 20 or 25 feet of water do you mean to testify that there has been enough force in the current of the St. Louis River to dig down deeper than it dug when there was no water there at all?

A. It hasn't dug as fast, but it has kept on digging.

Q. You think it has kept on digging. In other words, you think there are places there that are deeper there today than there were 30,000 years ago when there was no water of the lake there at all; that is your judgment?

A. Yes, sir.

Redirect examination.

By Attorney-General Owen:

Q. A lake ordinarily has no channel running through it, has it?

A. No, sir.

Q. Neither does a bay?

A. Not ordinarily.

Q. Now, there is a channel running through the Bay of St. Louis and the Bay of Superior, is there not?

A. Yes, sir.

Q. And that channel, in your opinion, is the St. Louis River, or, rather, that channel was cut down through there by the St. Louis River?

A. Yes, sir.

Q. Now it is evident that some of that channel has been cut since the river was submerged, is it not?

A. Yes, sir.

Q. What part of it?

A. Certainly all of the part between Connors Point and the Superior entry.

Q. Now, why do you say that?

A. Because when the St. Louis River flowed out between Rice's and Connors Point and there was not yet any Minnesota Point, if there was any channel continued beyond that,—that of course is doubtful that there was any—it would have gone straight
547 out. Now we find on the Meade chart that there is a line of greater depths, line of pits has been alluded to, I call it a channel, defined channel, that extends diagonally across from the International bridge to the Superior entry that must have been made after Minnesota and Wisconsin Points were made.

Q. How could it have been made?

A. It could only have been made by a flowing current across that lagoon between Rice's Point and Connors Point and Wisconsin and Minnesota Points.

Q. And that would be the only stream of the St. Louis River flowing down through this submerged water?

A. Yes, sir.

Q. The water that submerged the flats?

A. Yes, sir.

Q. Counsel on the other side industriously persisted in your comparing the mouth of this river with the mouth of the Mississippi River or the mouth of some other river that was not submerged. Now are there any other instances in this country, or any other country, for that matter, of submerged mouths of rivers?

A. Yes, a great many.

Q. Name some conspicuous examples?

A. There is the River Thames, a little stream submerged enough so it makes a great harbor. There is the Chesapeake Bay where we have the Susquehanna River and its tributaries, making a branching series of channel ways just like this bay, which indicates that there has been sinking of the land since the stream originally cut the main valleys and the side valleys. The drowned river, of course, is a rather common type.

Q. What about the Amazon?

A. The Amazon River drowned but not very deeply be-
548 cause the water doesn't back up its tributaries very much, but enough so that ocean steamers go up it a matter of a thousand miles or so,

Q. What is the difference between currents in a lake and currents in a river, Lake Superior for instance, currents we find in Lake Superior and currents we find in St. Louis River?

A. The currents in Lake Superior in general eddy around the whole lake, being rather more marked near the shore. That is because we have a current setting around the end of the bay counter-clockwise, that we have Minnesota Point long and Wisconsin Point short: in other words, if there wasn't any along-shore currents, the Superior entry would be north of where it is now quite a long distance. The current in the lake is also primarily a surface current. The current in the river generally flows along through the middle of the waterway and it may be a current that goes from the surface to the bottom, because a river has a shallower channel.

Q. I hand you a book and ask you if you know what that is?

A. That is a volume of the proceedings of the American Association of the Advancement of Science for 1869.

Q. Did you ever see that book before?

A. Yes. That is a book out of the University library at Madison.

Q. The historical library?

A. No; the University library.

Q. Have you read that book or portions of it?

A. I have read portions of it.

Q. Have you read any article in there or any portions of an article bearing upon the theory of the submergence of this
549 end of the lake, the tipping of the earth in this locality?

A. Yes, sir; an article by Mr. Stuntz, who originally located this boundary line.

Q. Who originally surveyed this section of the country?

A. Yes, sir.

The Commissioner: George R. Stuntz.

The Witness: Yes, sir.

Q. Now, at what page does Mr. Stuntz refer to the submergence of this end of the lake?

A. Pages 206 and 207.

Q. I will ask you to read what he says on that subject at those places.

A. "But nowhere is this filling up more apparent than in the bay above the mouth of the St. Louis River. In several parts submerged stumps several feet below the present water level are found. And numerous valleys surrounding the main bay, when we consider the nature of the soil and the formation, a tough red clay, in all of which the water is deep, could not have been excavated in the natural course of events, with the water at its present level."

The Commissioner: Is it stipulated, gentlemen, that George R. Stuntz is dead?

Mr. Fryberger: Yes.

Attorney-General Owen: We will stipulate that he is dead. We will offer this as a scientific work, though, of which the courts will take judicial notice.

550 Rec'd Aug. 10, 1917. D. E. Roberts, Com'r.

FEDERAL BUILDING, SUPERIOR, WISCONSIN,
WEDNESDAY, August 8, 1917, 10 a. m.

The taking of testimony was resumed before the Commissioner, Hon. David E. Roberts, at the above time and place.

Present: The Commissioner, Hon. David E. Roberts;

On behalf of the State of Minnesota, Hon. Lyndon A. Smith, Attorney-General of the State of Minnesota; Mr. W. D. Bailey, Mr. H. B. Fryberger, and Mr. Louis Hapitch.

On behalf of the State of Wisconsin, Hon. Walter A. Owen, Attorney-General of the State of Wisconsin, Mr. Horatio V. Gard, Mr. Lyman T. Powell, and Mr. T. T. Hudson.

The following testimony was introduced and the following proceedings were had, to-wit:

LAWRENCE MARTIN, a witness on behalf of the State of Wisconsin, was recalled and testified as follows:

Examined by Attorney-General Owen:

Q. Mr. Martin, the United States Geologic Survey is sort of a map-making department connected with the Federal government, is it not?

A. Yes, sir, it is the chief map-making department.

Q. What character or style of maps do they generally make?

A. Their maps are topographical and geographical maps rather than maps to show forests and other things, but they make really the mother maps of the United States. They leave to the
551 Coast Survey and the Lake Survey the putting on of soundings and matters of that kind. They outline the shores very accurately. They show the features of culture, such as houses and railroads and boundaries; they always show the boundaries, the state and county and township boundaries, and so on.

Q. Do they show the boundaries with accuracy?

A. I think with the greatest accuracy.

Q. In other words, they exhaust all of the available information in order to make the map; is that what you mean to say?

A. Yes, sir. The man who does the field work has his work reviewed by officers in Washington; so that when you see a boundary on a map of the United States Geological Survey, just as when you see geographical names, you can be sure that it is the government's choice from all the available information they had.

Q. Why did you say 'just as geographical names'? Why did you use that as an illustration?

A. Because geographical names are reviewed in Washington before the map is actually printed.

Q. By whom?

A. By the United States Geographic Board, consisting of officials from the Geological Survey, from the War Department and the Navy Department, from the Land Office, and so on.

Q. Are these boundaries reviewed by the same board?

A. It is changed now, the name. It used to be the United States Board on Geographic names, and now it is called the United States Geographic Board, but whether they cover the boundaries
552 or not I do not know.

Examined by Mr. Fryberger:

Q. Mr. Martin, I could not get a very good idea of your idea of a river. As I understood your testimony, you said the river had a channel and had banks; that is about what you said. I wish you would define what a river is, what you understand a river to mean.

A. A river is a body of moving water on the land; it usually has a distinct current and well-defined banks.

Q. Is that all?

A. Those are the essential characteristics.

Q. The current runs from the source to its mouth, doesn't it?

A. Yes.

Q. And when the current runs the other way, when a body of water runs both ways you cannot properly call such a body of water a river, can you, and you do not?

A. Geographers do in many cases.

Q. Take the Chesapeake Bay that you spoke of. What river flows into the Chesapeake Bay?

A. The Susquehanna River.

Q. How long is Chesapeake Bay?

A. Oh, it must be 150 miles.

Q. Now, you do not claim, do you, that the Susquehanna River, running that entire distance from the farthest point, northwestern point of Chesapeake Bay down to the ocean,—you do not call that the Susquehanna River, do you?

A. I should want to study the evidence as to currents and submerged channels before I answer that question.

Q. Well, do not people generally call that "bay"? Do they
553 ever refer to the Chesapeake Bay as the Susquehanna River?

A. No, sir.

Q. Why, of course not. How wide is Chesapeake Bay?

A. 50 miles.

Q. Chesapeake Bay is another case of a submerged river, drowned river, isn't that true?

A. Yes, sir.

Q. Just the same as they have up here?

A. No, not just the same.

Q. One is in Minnesota and Wisconsin and the other down on the Atlantic coast; that is the only difference, is it not?

A. No, indeed. This one is submerged but not submerged so much as to obliterate the original channel. The Chesapeake Bay, I don't know whether the original channel is there or not. This one is submerged only enough so that the water backs up, but not enough to prevent a continuous current from going away out to the entrance

at Superior entry, while at Chesapeake Bay I suspect there is not any current that goes all the way out.

Q. You suspect?

A. Yes. I have never studied the current records and the chart of Chesapeake Bay.

Q. As long as there is a current they call it a river?

A. Yes.

Q. The current of the Mississippi River runs out into the Gulf of Mexico five or ten miles; you can go out on a boat and see it, isn't that true?

A. You can see different color.

Q. And there is a current; isn't that true?

A. Yes.

554 Q. Now, you do not call that "Mississippi River" out that five to ten miles beyond where it empties into the Gulf of Mexico, do you?

A. No, sir; it has no banks.

Q. Now, you spoke about the great authority of the maps made by the Geological Survey, that department of the United States government. You say that their maps are accurate, that they can be depended on?

A. Yes.

Q. And when they have a boundary question they have that accurately defined, so there is no question about the boundary; is that true?

A. I should take the boundary as it was drawn on the United States Geological Survey map. I should take the boundary as drawn on the United States Geological Survey map as the final authority unless there had been adjudication of that specifically afterwards.

Q. You understand, do you not, that the Supreme Court of the United States is the final authority on a disputed boundary? They do not get their authority from this survey made by the United States.

A. They get evidence, undoubtedly, from that and many other sources.

Q. Now, calling your attention to the definition of a river given by Major David C. Huston, of the United States Corps of Engineers, who had charge of the harbor improvements at Duluth from May, 1870, to 1873—and I am calling attention to the definition that he gave in a case that was pending in the United States court for the District of Wisconsin, in the case of The State of Wisconsin, Complainant, vs. The City of Duluth and The Northern Pacific Railroad Company, and see what criticism you have of that definition.

555 I read from page 436 of the record in that case, the deposition of David C. Huston, located at Milwaukee at the time the deposition was taken. This is the record of the testimony in that case. "A. A river properly is one where the current is always from its source towards its mouth." Now do you criticize that?

A. Yes, sir, because that excludes the Hudson River which has a tide going up.

Q. Well, we will come to his testimony on the Hudson River in a

few minutes. "Near the mouth where it empties into large bodies of water, such as the ocean or any large body where the surface rises and falls, the current is affected by this rise and fall of the larger body of water and the tides, so that we have the river proper where the current is always from the source down, and the tidal department where the direction of the current varies, and where the cross-section of the water is not due to the river proper." Do you criticize that?

A. That seems to me to be a fair general statement.

Q. Now, the level of this water in the upper St. Louis Bay is not due to the river at all, isn't that true, and didn't you so testify yesterday?

A. That does not seem to me, however, to exclude its being a drowned river.

Mr. Fryberger: Read the question, Mr. Reporter.

(The question was read by the reporter.)

A. No, the level is controlled by the level of the lake.

Q. Certainly. Then continuing this definition of Major Huston: "that is, due to the water which properly comes from the
556 river. These bays into which rivers empty are not due, their physical formation is not, to the river; they are generally due to other causes." You agree with that, do you not?

A. Not entirely.

Q. Not entirely?

A. No.

Q. "The bay of Superior is a body of water, the level of which is affected by the level of Lake Superior; so I do not consider the mouth of the bay of Superior as the proper mouth of the St. Louis River in a scientific sense. I would place the mouth of the St. Louis River proper several miles above Rice's Point, because the current, the upstream current caused by the lake, extends several miles above that point at times, and the formation of the stream, its banks, is evidently due to the action of the lake in that portion." Now would you criticize that definition in any other way than in the manner you have specified?

A. Yes, I would add that he is entirely wrong in saying that the form is due to the action of the lake.

Q. That is, the indentations of these shores is due to the action of the lake?

A. Yes, sir.

Q. You think he is wrong there?

A. You remember I testified yesterday that the form was a specialized form which is due to the drowning of the stream at its tributaries.

Q. Now let me call your attention to what he said about the Hudson River, and see if you agree with that. This is on page 438. (Reading) "The Hudson River; in speaking of the mouth at this
557 point I have referred to the discharge of the river, getting the amount of water the river discharged, the place I would gauge it; I would gauge the Hudson up there, and get the

discharge of the river at Troy, or above it; of course the river is designated as a river all the way to New York City, but it is an arm of the sea practically for a number of miles above New York, certainly sixty miles, properly an arm of the sea. The water is salt; tides are marked." That is all true, is it not?

A. Geographers would not agree with that at all.

Q. Would not agree with him at all?

A. Because it is usually agreed that an estuary, although connected with the sea, is part of the river, and that that is so is demonstrated by the use of the name "Hudson River" for the part that is an estuary, which has brackish water, and a rise and fall of the tide.

Mr. Fryberger: I think that is all.

Examined by Attorney-General Owen:

Q. Now, Professor, you have heard what the Captain of Engineers said in his testimony, and you have been asked whether or not you agree with the specific statements. Consequently, you have not had any opportunity to state in a general way what your differences are. What is this captain's name?

Mr. Fryberger. Major Huston.

Q. Major Huston. Now I will ask you whether you want to state, more generally than you have been permitted to do, how your views differ from the views, as just read, of Major Huston.

558 A. I suspect that if I had time to analyze the statement of Mr. Huston that there would be a number of points on which I would differ with him fundamentally. As to the broad generalization, he went entirely too far in some cases. It seemed to me that his testimony was colored by the issue at stake, and I am sure that Major Huston, who is an engineer officer, has not given as much attention to the study of rivers as he would want to give if he expected his definitions to be rigidly applied to all rivers in the world. Certainly, you could not literally apply his statements to all rivers. If you did, the name "river" would have to be removed from many bodies of water to which it is now applied by universal agreement.

Examined by Mr. Fryberger:

Q. There is one question that Mr. Bailey called my attention to that I omitted to ask you but that I intended to. Now after giving this definition as applied to the St. Louis River, the Major was asked this question: "What point would you fix as the mouth of the river?" (That is, referring to the St. Louis River.) And he answered: "In the neighborhood of 12 miles above Rice's Point. Not attempting to fix it definitely, I would fix it at that point where the current ceases to be affected by the oscillations of the lake." Now would you criticize his statement in fixing the mouth of the river at least twelve miles above Rice's Point?

A. I think his conclusion is absolutely indefensible.

Q. That is, you think he is absolutely wrong, in other words?

559 A. Yes, sir.

Q. Now, assuming it is true that he had entire charge of the improvements of the St. Louis River and bay, at the head of Lake Superior, for three years, do you mean to say or to infer that he was not familiar with the situation here?

A. I think he is familiar with the waters, but I cannot conceive of a man who is familiar with the habits of rivers placing the mouth of that river where he did.

Q. Notwithstanding the fact he had charge of it for three years and the improvement of it?

A. Yes, sir.

Q. You are familiar of course with the methods and the methods used by the government engineers in preserving all their records and handing them over to their successors in office?

A. Yes, sir.

Q. And that he had the benefit of all that had gone before him?

A. Yes, sir.

Q. In the improvement of these waters. And yet you reach an entirely different conclusion from what the major did?

A. Absolutely.

Mr. Fryberger: That will be all.

Examined by Mr. Bailey:

Q. Just one question. Isn't it undoubtedly true that these rivers, say, along the north shore, like the Lester River, Gooseberry River, Knife River, and some of those other rivers up there, had channels which flowed a good deal farther out than they do now, at a time twenty or thirty thousand years ago, when the waters were lower than they now are?

560 A. I doubt if there were any channels that went beyond the present shore line, except at the Nipissing stage of the Great Lakes, and then the shore line, which is just under water twenty feet or so, was a trifling distance off shore. There would not be an extension of 100 yards.

Q. Well, that would only be true in cases where the waters were very deep close to the shore at the present time?

A. That is true, however, most of the way from here to Port Arthur, that the water is pretty deep close to the shore.

Q. Take it on the south side; the shore does not drop off there so suddenly, on the south side?

A. No, sir.

Q. Take those waters that flow into the lake on the south side. Undoubtedly channels from those rivers extended a great deal farther when the water was lower than they do now; isn't that true?

A. At that one stage there were channels that extended out farther than the present.

Q. Now those are drowned rivers at the present time, aren't they?

A. Yes, sir.

Q. And yet you do not consider those rivers go any farther than the shore of the lake at the present time?

A. Because no current maintains itself out beyond the present shore.

Q. Well, there is always a current at the mouth of a river, isn't there, when it goes into a lake, some distance out?

A. Not for some distance out, because those rivers are so small.

Q. Then, it is just a matter of size, isn't it?

561 A. If this river was not so large it could not maintain a current out.

Q. Do you mean by that, that a big drowned river is still a river but a small drowned river is not a river?

A. That would be true in some cases.

By Mr. Fryberger:

Q. Just one other question. On page 417 of this record, I want to ask you with reference to Major Huston's opinion again. Or, preliminary to that, as I recall your testimony, Professor, you consider the bay of Superior and the bay of St. Louis, upper and lower, as a part of the St. Louis River?

A. Yes, sir.

Q. Now I want to call your attention to this question that was asked Major Huston, and his answer thereto. (Reading) "In your opinion and from your observation, state whether or not the bay of Superior is now, or ever has been, a portion of the St. Louis River. A. I do not consider it a part of the St. Louis River at all. It has never been, in my opinion." Now you differ from him entirely on that, do you?

A. I differ from him because he overlooks the submerged channel which shows definitely on the Meade chart, and he overlooks the out-going current which the records in his office, which you alluded to, show clearly to be maintained.

Examined by Mr. Bailey:

Q. You know, Professor, that from Rice's Point northward, before the canal was cut, there was not any current up there at all; was there?

A. Yes, sir.

Q. No channel?

A. Yes, sir.

562 Q. And yet you still maintain that that was part of the river?

A. The body of water from Rice's Point northward is a part of this same——

Q. Is part of the river, is what you mean?

A. Part of the river; yes, sir.

Q. You have got to say that in order to maintain your theory; I see no escape from it.

A. I would not say it unless I believed it to be true.

Examined by Attorney-General Owen:

Q. The counsel made you say that a small drowned river might not be a river, while a large drowned river was still a river; the inference he sought to draw being that whether it was a drowned river or not depended on its size. Now will you state what makes it a drowned river? What determines whether it is still a river after it has been drowned?

A. Well, a drowned river is a drowned river, regardless of size, but whether you can find evidence years after, thousands of years after it was drowned, depends on whether it happens to be a stream of the magnitude that maintains a channel and a current, or a little stream in which the evidence is obliterated.

Q. And whether it is pronounced a drowned river or not depends upon whether the current and the channel is discoverable at the time?

A. Yes, sir.

Q. And of course the size of the river determines to a large extent at least whether the channel cuts its way through the water by which it was drowned?

A. Yes, sir.

563 Q. Does the fact that the water in these bays comes in part from Lake Superior make any difference with this being a river?

A. No more than in the case of the brackish water in the Hudson River.

Q. The fact remains that the channel still maintains itself down through these waters to the entry——

A. Yes, sir.

Q. —or the outlet?

A. Yes, sir.

Q. Which we call the Superior entry. And that is why you say that it is a river?

A. Yes, sir.

(A map was marked Wisconsin Exhibit 4.)

Q. I show you Wisconsin Exhibit 4 and ask you what that is.

A. That is a copy of the Duluth sheet of the United States Geological Survey.

Q. What do you mean by "Duluth sheet"?

A. The United States Geological Survey publishes rectangular maps which are called "sheets" or "quadrangles." They are bounded by parallels and meridians.

The Commissioner: That is one of them, I suppose?

Witness: This is one of those quadrangles or sheets.

Q. Where did you get that?

A. I bought it in the City of Duluth.

Q. Is it a map in general use?

A. Yes, sir.

Q. And you can buy it at most any place?

A. The United States Geological Survey maintains a stock in a store in almost every important city in the United States.

Q. And you have seen a great many copies of that map?

564 A. Yes, sir.

Attorney-General Owen: I offer Wisconsin Exhibit 4 in evidence.

The Commissioner: Received.

Q. There is not any attempt made, evidently, on the map to locate the boundary line between Minnesota and Wisconsin.

A. I think there is no boundary shown on this map because no part of the State of Wisconsin comes within the area of this map.

Q. That is the reason no attempt is made to fix the boundary?

A. Yes, sir.

Q. Because the territory represented on that map is all within the State of Minnesota?

A. Without doubt that was given careful attention. There are two things that always appear on these United States geological survey maps that indicate what state is covered. First, they always draw boundaries and mark boundary lines between Minnesota and Wisconsin, and the names of the counties usually; and, in the second place, they always print, in the corner of the map, the name of the sheet; and if the map covers parts of two states, they will write, instead of Minnesota, as on this sheet, Minnesota-Wisconsin.

By Mr. Bailey:

Q. Mr. Martin, I take it under your definition of a river, then, you would consider that there was not any lake Peppin, it was all Mississippi River, would you?

565 A. I should want to investigate the area there somewhat before I made a decision about that.

Q. Well, you know about as much about that as you do about these waters up here, don't you? Have you made any survey of the situation down there, or investigated it?

A. No, sir, I have never studied there; I have never studied there as I have here. I have been there.

Q. Assuming that has a channel through it and a current through it, as of course it has, why, that would have to be a river under your definition, wouldn't it? It has shores.

A. I should want to investigate it, but assuming a channel and assuming a current also——

Q. I think I put in everything you suggested except banks, and I put those in now. Assuming all those three things were there, then that would be a river and there would not be any lake there?

A. Yes, sir.

Mr. Bailey: That is all.

Attorney-General Owen: Isn't that what you think about it—that it is a river?

Mr. Bailey: Well, I don't suppose my conclusion will govern,

but everybody else that has ever passed upon it considers that is a lake, I believe.

Examined by the Commissioner:

Q. Have you seen Chequamegon Bay at Ashland, Wisconsin?
A. I have been across it; I never worked there in any detail.
Q. Is that a true bay, or is it not?
A. I should want to know about these two things that I have been insisting on, whether there is any submerged channel
566 and any current, before I answer that question.
Q. What is a true bay? How does it differ from this up here, the St. Louis Bay?
A. Well, a bay, being a part of the lake or part of the ocean—we speak of it as a place that has standing water rather than running water, of course recognizing that there are currents of the surface type, of the ocean type there. A bay would be a place that had standing water rather than the running water of a river. A bay would be a place that had no definite channel running through it, probably.

The Commissioner: That is all.

567 E. F. BEAN, being duly sworn as a witness on behalf of the State of Wisconsin, testified as follows:

Direct examination.

By Attorney-General Owen:

Q. Mr. Bean, where do you reside?
A. Madison, Wisconsin.
Q. What is your vocation?
A. I am Assistant State Geologist for the State Geological Survey of Wisconsin, and give part of my time to the University as Assistant Professor of Geology in the Department of Geology.
Q. How long have you been Assistant State Geologist?
A. I have had that title for a little over a year; had those duties for about five years, although my title in that capacity was Chief of Field Parties, since a great deal of my time in the summer was spent in directing the work of Field Parties.
Q. Now tell us what the nature of your work has been for the last five years.
A. The State Geological Survey has been conducting work which we call Mineral Land classification. In that work we survey certain areas of the state, running traverse along the section lines and quarter lines, taking dip needle readings and dial needle readings, to determine whether or not there is any magnetic attraction in the particular area we are studying. We map the rock outcrops and in general seek to determine whether or not this area is one where exploration for iron ore can be recommended. In this work
568 we have covered a large area in northern Wisconsin, the Wisconsin part of the Gogebic Range, large areas in Price,

Ashland, Bayfield counties of Wisconsin, and have worked the last two seasons in the northern part of Wisconsin.

Q. Where did you receive your geological education?

A. At the University of Wisconsin.

Q. When did you graduate?

A. 1909.

Q. Did you teach geology any before you became Assistant Professor in the University?

A. Yes, I began as an Assistant in the department while I was a student.

Q. While you were in the University?

A. Yes, sir.

Q. Have you taught it anywhere except in the University?

A. No, sir.

Q. Didn't you teach it here in Superior?

A. I taught physical geography here in the Blain High School in Superior for one year. I thought you had reference first to teaching.

Q. Physical geography bears a close relation to geology?

A. Yes, sir.

Q. Now, are you familiar with the waters between Superior and Duluth, known as the St. Louis Bay and the bay of Superior?

A. I am.

Q. State the extent of your familiarity with those waters.

A. As teacher of physical geography here, I conducted field excursions with my high school classes to the Duluth bluffs, to Minnesota Point, studying those places, and just as a student of geology, myself, tramped over the Wisconsin and Minnesota Points,
569 and visited a good many of the bays and slips upriver from Superior.

Q. Have you been on boats to some extent?

A. Sir?

Q. Have you boated on these waters to some extent?

A. Yes; more in the way of canoeing, though. I was interested in shore lines and general formation, type of exposures, and so most of my traveling has been by canoe rather than by boat, because that was a more convenient method of making landings.

Q. And the purpose of this traveling was to further your geological examination and exploration?

A. Yes, sir.

Q. Now, from your knowledge of geology and your exploration of these waters and the territory hereabouts, have you formed an opinion as to whether the waters known as St. Louis Bay and the Bay of Superior are part of the St. Louis River or part of Lake Superior?

A. I have always believed that they were part of the St. Louis River.

Q. Now will you state your reason for your conclusion?

A. On my first general visit here, first, the general difference in appearance of the land inside of Minnesota and Wisconsin Points and the land outside of Minnesota and Wisconsin Points. Inside of

the Points we have a shore line which is characteristic of river-formed topography. You have spurs between drowned valleys.

Mr. Bailey: Between what?

Witness: We have spurs of land between drowned valleys. Each of these various slips that we have up the river is merely a
570 drowned valley between spurs of land. You get outside of Minnesota Point, and the shore line is characteristically a lake shore line, where you have projecting points of land, but the re-entrance is different, that is, the bays are different from the bays that we have inside of the two main points. The second thing that made me feel that this is a river, was the fact that upon examination of the charts I found that within the bays here there are different channels, such as you frequently find in a drowned river valley. The third point was a point that impressed itself upon me the first time that I ever saw the St. Louis River; that was the fact that there was a definite current passing out of the Superior entry,—a current that showed itself in the different color of water out beyond the Superior entry, proving conclusively to me that the St. Louis River had a definite current passing out through the bays and out through Superior entry.

Q. From what points have you observed that current?

A. Well, the most striking places I have seen it have been from the Duluth bluffs; I have seen it several places, from the Boulevard and from London Road in Duluth, and I have been at the Wisconsin entry on the Minnesota side on several occasions when you could distinguish a well-defined current going out.

Q. Now you say, do you, that that current is distinguishable from the Duluth bluff?

A. Yes, there is a very definite color distinction there, the yellowish waters of the St. Louis making a striking contrast
571 from the greenish or bluish waters of Lake Superior.

Q. About how far is that?

A. Well, any answer that I could give would be just an estimate, but I feel pretty positive that there were times when you could distinguish that for at least a mile beyond the entry. I do not know that as a fact.

Q. I mean how far is it from the Duluth bluffs over to the Superior entry where you observed this current?

A. I must have been at least five miles away.

Q. From five to seven miles?

A. Yes.

Q. Now, is the phenomenon of a drowned river a common thing in geology and physical geography, and is it something that is recognized by scientists?

A. It is.

Q. There are many drowned rivers known throughout the world, world, are there?

A. There are, for the simple reason that a stationary shore line is a relatively unusual thing. Most of the shore lines that we are familiar with have had movements of uplift or depression some time

in their history; so the phenomena of raised beaches or of submerged drowned valleys are common.

Q. Now, how is this drowned river formed here, in your opinion? In other words, how is the drowning brought about?

A. The drowning may be brought about by a——

Q. I mean here.

A. Here? It is brought about by slight tilting of the land, the south shore depressed relatively to the north shore, resulting in the backing up of water here, the lowering of the level here, re-
572 sulting in the drowning of this river mouth.

Q. Have you ever studied Grassy Point, Rice's Point, Connor's Point, Wisconsin and Minnesota Points, with a view of arriving at a conclusion as to when and how they were formed?

A. I have studied them, and my conclusion is that Rice's and Connor's Points and Wisconsin and Minnesota Points were formed by a combination of two things. Along shore currents of the lake carry sediment from the north shore, in the case of Minnesota Point, and from the south shore, in case of the Wisconsin Point,—carry that material along and drop it in quieter water. Second, waves coming on shore at the Points, picking up that material and depositing it to form these bars. There has been further action in the work of winds in piling up this sand to some extent in the dunes we find on the Points. But their general location is water action, and the source of the material is from the lake. In the case of Grassy Point, I think that that, possibly, is a spur from the old island, a spur which has been moved by wave action and by river action, leaving it somewhat lower than any other points. It is rather difficult to get the exact information about Grassy Point at the present time, because the activities of man have obscured so many features there.

Q. I suppose you agree that Rice's and Connor's Points were formed before Wisconsin and Minnesota Points?

A. Yes.

Q. Do you think the action of the river or the waters of the river had anything to do with forming any of these points?

573 A. Very little. There may have been some slight modification, but the actual formation of the points was not due to the river. The river does not carry the type of sediment that we find in the points.

The Commissioner: These Points are pure sand?

Witness: Sand out towards their ends, but gravel nearer the main land.

The Commissioner: Near the lake?

Witness: Yes. As a natural thing, the alongshore current dropped the heavier material first, and then finer and finer as it went out; so that the Points as we see them are, in large measure, sand.

Q. By the term "alongshore currents" you mean currents running along the shore of the lake?

A. Of the lake, yes.

Q. And parallel with the shore?

A. And parallel to the shore; set up by winds that are coming in at a slight angle to the shore.

Q. What do you say as to there being tides in these waters?

A. I have never observed the tide here, but the record shows that there were slight tides.

Q. What other influence has caused a rising and falling of the waters at the head of Lake Superior?

A. A strong wind which would tend to cause a piling up of the water at this end of the lake, would cause a rise of water in the basin; and a difference in atmospheric pressure would cause a slight lowering or a slight increase of height here.

574 Q. Did you read the testimony given by Mr. Leonidas Merritt in this case?

A. I did.

Q. Did you read what he said with reference to what he called a "trough theory" in the formation of iron ore?

A. I did.

Q. Did you note his statement that President Van Hise later promulgated or exploited the same theory, giving it the name of "basin theory"?

A. I did.

Q. Now is it true that President Van Hise has exploited what he calls the "basin theory" of the formation of iron ore?

A. He has.

Q. Are you familiar with that theory?

A. I am.

Q. Is that theory the same as Mr. Merritt termed a "trough theory"?

A. The two theories are decidedly different.

Q. What is President Van Hise's so-called basement theory?

A. His basement theory is that iron ores are formed by underground water percolating through what we call iron formation, and in that process dissolving out silica, resulting in a larger percentage of iron, making an iron ore. This is a straight process of solution by underground water, and the basin, the shape of the basin, is controlled entirely by the structure of the formations associated with the iron formation. In the case of the Missabe we have an outlying quartzite formation and an overlying slate formation, which are impervious to water, control the circulation of water, and therefore result in a basin-shaped area or region in which concentration occurs.

575 Q. When did that take place, presumably?

A. It took place some time after the folding of the Huronian rocks, of which the iron formation is a part. That is very ancient geological time.

Q. Was it during the glacial period, or before or after?

A. A very long time before the glacial period.

Q. How does that theory differ from the theory described by Mr. Merritt in his testimony and by him termed a "trough theory"?

A. Mr. Merritt's theory is that the ore was formed by sea water coming in contact with ice and precipitated its iron upon that contact; that favorable places to look are places along that shore where

there are eddies, resulting in concentration or excess development of iron.

Q. That is an entirely different idea from the one promulgated by President Van Hise?

A. Quite different.

Q. How long, about, have these points existed here—Wisconsin, Minnesota, Rice's and Connor's Points?

A. I do not like to express that in years, but it has been a very, very long time.

Q. A thousand years.

A. That is a long time as we figure time in our history, but a relatively short time as we figure geological history.

Q. They have been here a thousand years you would say?

A. Yes.

Cross-examination.

By Mr. Bailey:

576 Q. As I understand you, the essential difference between President Van Hise's theory and what you describe as Mr. Merritt's theory is, that under Mr. Merritt's theory the iron ore was deposited from sea water coming in contact with ice?

A. Yes, sir.

Q. And under President Van Hise's theory there was low grade ore in these places where we now find deposits, which was leached out by underground waters?

A. Well, the silica was leached out.

Q. That is what I mean; the silica was leached out, so that it raised the grade of the ore?

A. Yes, sir.

Q. Now, under President Van Hise's theory, how did the low-grade ore originally get there?

A. The origin of the iron formation was a sediment.

Q. Sediment from what?

A. Sediment from—possibly from lands surrounding that.

Q. From what?

A. From higher lands surrounding it. The iron formation is a sediment, something like a limestone, possibly, in its origin.

Q. You say a sediment; I take it a sediment means a deposit?

A. Of water, yes

Q. Where did the sediment come from, what waters?

A. Possibly from rocks on the land.

Q. No, I say from what waters?

A. Well, ocean waters, that probably had——

Q. Well, where is there anything inconsistent between President Van Hise's theory and Mr. Merritt's theory, because Merritt's theory comes into play before Van Hise's comes in at all.

577 A. Van Hise's theory is that it is a sediment, but a sediment does not form by contact of ocean water with ice, because we have no evidence at all of any ice at that time.

Q. The principal difference is the elimination of refrigeration?

A. Well, that and a good many other things.

Q. Well, what other?

A. In the first place, under the Merritt theory, the origin of the iron ore and the concentration was all taken care of in lump process, and had taken place in recent geologic times.

Q. Then, it is a difference of time?

A. Well, time and process.

Q. Are you familiar with Prof. Winchell's report on the Missabe Range?

A. Just slightly.

Q. Didn't you say that your particular business was following out iron formations and using the dip needle?

A. Yes, sir.

Q. Then, your specialty is oron ore?

A. Yes, I am very much interested in iron ore.

Q. Then, would you say you had not read Winchell's report?

A. Yes, I have read Winchell's report, but it is one of the oldest reports and one we do not follow very much.

Q. Rather out of date, isn't it?

A. Yes, out of date.

Q. And entirely incorrect, as a matter of fact, isn't it?

A. Yes, in some of his conclusions he was wrong.

Q. I am speaking more particularly about the Missabe Range.

A. Yes.

Q. That is, he condemned it as a merchantable proposi-
578 tion, didn't he?

A. Practically, yes.

Q. And it has turned out to be the greatest iron-ore deposit in the world, so far as is known, hasn't it?

A. Yes, sir.

Q. How long ago was that report written, wherein he condemned it in unqualified terms?

A. I could not give you the exact date of publication; I should say around 1880, but I would not want to——

Q. Well, it was a little later than that, wasn't it,—in the '80's some time, wasn't it?

A. The field work was done in the '80's, if I remember right.

Q. But his report was made, as a matter of fact, only three or four years before they commenced to ship ore in great quantities from the Missabe Range, wasn't it?

A. Yes; the actual discovery of ore on the Missabe was about 1888 or 1889, wasn't it?

Q. Yes.

A. Yes, 1889 or 1890.

Q. They commenced to ship about 1892?

A. Yes.

Q. So it was in a period of less than ten years that his geological theories were absolutely disproved by the commercial development?

A. Yes, sir.

Q. There are surrounding the head of Lake Superior—and I

mean by that within one hundred or two hundred miles of the head waters of Lake Superior—very large mineral deposits, are there not?

A. Yes, sir.

Q. Do you know of a single one of those that has ever been proven up or shown to exist by geologists?

579 A. By geological methods.

Q. Yes.

A. I do.

Q. Well, I say by geologists; that is the way I put it.

A. The Cuyuna Range was explored magnetically by exactly the same methods that all geologists are using.

Q. It was explored by Mr. Adams?

A. Yes.

Q. He never went to a geological school at all, did he?

A. I might say that all knowledge is not gained at school. Mr. Adams is a geologist.

Q. In the sense that he used the dip needle?

A. In the sense that he used the dip needle and in the sense that he uses his knowledge of geology in his explorations. He realized the necessity of geological education, as you will find by the fact that he sent his son to Cornell, and when he finished there he sent him for a year's post-graduate work at a university, making him a specialist in iron ore, and he was of great assistance to his father in the development of the Cuyuna Range.

Q. Is that the nearest you can come to it?

A. The instance mentioned yesterday, by Mr. Martin, on the Gogebic Range.

Q. That was where they delineated or marked out in a general way the formation, wasn't it?

A. He outlined the formation, yes.

Q. And some one else discovered the mine?

A. I might mention the case of a geologist, Hugh Roberts, working for the E. L. Longyear Company, who went to a place just a little west of Crystal Falls, Michigan, in an area that had

580 been abandoned as a mining proposition, and he outlined the proposition by magnetic methods, and he and Mr. Meade of the same company directed exploration there; they did the geological work and outlined an ore body of something like four or five hundred thousand tons.

Q. That was after the ore had first been discovered and mined and abandoned, and then they found an extension of the same ore body?

A. The old ore body had been mined out, and they went on further and found this larger body. I could name other cases of that sort outside the iron country. In the case of the Kennicott——

Q. They can ask you about that if they want to; I am asking you about the head of Lake Superior; I do not care to go off into some other states so far afield. Is that what you were going to say?

A. Yes, there are other instances.

Q. We do not care to go all over the world.

Attorney-General Owen: I think your question contemplated just what he is telling you.

Mr. Bailey: No. I asked him within two or three hundred miles of Lake Superior. If you want to bring it out, you can.

Attorney-General Owen: Well, if your question is limited I do not insist on it.

Q. Now, as a matter of fact, on the Missabe there were none of those mines up there discovered by the dip needle or magnetic operation, were they?

A. One discovery was made by actually finding the ore, shown up by the overturning of a tree, and later discoveries were
581 made—I won't say later or earlier, but some discoveries were made by test pitting. You have a belt formation there that is very wide and the outcropping is very near the surface.

Mr. Bailey: I will ask the reporter to read the question, and will ask you to try and answer it.

(The following question was read by the reporter: "Now, as a matter of fact, on the Missabe there were none of those mines up there discovered by the dip needle or magnetic operation, were they?")

Mr. Bailey: So far as you know.

A. No; not the early ones, at any rate.

Q. You do not know of any later ones either, do you?

A. I think you will find that some of the later discoveries were outlined by magnetic means.

Q. What?

A. The expiration was controlled by——

Q. What ones, for instance?

A. I cannot give you any.

Q. Any magnetic attraction up there?

A. Yes, the eastern Missabe.

Q. But you do not know of any mines that were so discovered?

A. I cannot give you specific instances.

Q. Do you know of anybody that discovered them?

A. No.

Q. Now, you gave three reasons for thinking or for saying that in your opinion these waters here between Wisconsin and Minnesota, some of which are in dispute, should be considered a river rather than an arm of the lake or bay?

A. Yes, sir.

582 Q. The first one that you gave was that there was a general difference of appearance of the land inside and outside of Wisconsin and Minnesota Points?

A. Yes, sir.

Q. And that inside the shore line was indented to a considerable extent?

A. Yes, sir.

Q. That is the difference that you refer to?

A. Yes, although I elaborated upon that to some extent.

Q. And you say that that characterizes a river rather than a lake?

A. That would be one way that I would characterize it.

Q. Just step down here a minute, will you, Mr. Bean? Now calling your attention to Minnesota Exhibit 18, which is a map of St. Louis County, you see before you the outlines of Vermilion Lake on that, don't you?

A. I do.

Q. And the whole thing is nothing much but indentations, is it?

A. That is true.

Q. Well, you would not call that a river where it is marked "Lake" there, would you?

A. It happens that that is a river which is formed by the blocking of a pre-glacial river.

Q. Then, I take it that under your theory that is now a river and not a lake?

A. No, I did not say that.

Q. It must be, must it not? It conforms to your definition of a drowned river?

A. It has one of the characteristics I mentioned as the characteristics of a river, but in this particular case it lacks some of the other characteristics.

Q. We are talking about the indentations, now, mind. And even Pellican Lake is also full of indentations, isn't it?

A. It is.

583 Q. And you get up here to where you see Kabetogema Lake; that is also full of indentations?

A. Yes, sir.

Q. But you would not call either Pellican Lake or Kabetogema Lake rivers, would you?

A. No, sir.

Q. And so far as Vermilion Lake is concerned, there is a current through that; isn't there?

A. I am not familiar enough with that lake to answer the question.

Q. And there are banks there, aren't there?

A. Yes, sir; shore features.

Q. So that you have got the three features that you suggested, and also a current?

A. I am not sure about the current there.

Q. So, if there is a current, then you have got all the features that you suggested as distinguishing these waters from a lake, to show that they are a river, haven't you?

A. Not necessarily.

Q. Well, what else is there that you have not covered?

A. You have a body of water there that has the general characteristics of a lake.

Q. That is, in Vermilion Lake?

A. In Vermilion Lake, yes.

Q. But they are the same characteristics that you have in upper and lower St. Louis Bay, aren't they?

A. Yes.

Q. Assuming there is a channel through Vermilion Lake.

A. For the simple reason that their history has been much the same. You have the drowned river valley there.

Q. Then, I take it we are getting right around to the point where I asked you if, according to your theory, this which is
584 marked Vermilion Lake is not in fact a river and not a lake?

A. If you have a drowned channel, if you have a current in Vermilion Lake, under our definition it would be classed as a part of a drowned river. I do not think you have those.

Q. What is that?

A. I do not think you have those.

Q. You know there is an inflow into Vermilion Lake, and outflow?

A. Practically so there is in every lake.

Q. And you know there is a channel in the lake there, don't you?

A. I don't know about the drowned channel.

Q. Then, do I understand that you get down, in the last analysis, to making the distinction entirely upon the drowned channel feature?

A. In making any classification it is necessary to examine all features and make your classification on the basis of your findings.

Q. Now, you take those two bodies of water right at the top of this Exhibit 18 marked Rainy Lake and Namequan Lake. The shore there is nothing but a series of indentations, is it?

A. Yes, sir.

Q. And in some instances much larger indentations than Pokegama Bay, for instance, or any of these smaller bays that are branching off from St. Louis Bay?

A. Some of them are quite large.

Q. And so far as this larger indentation in Rainy Lake is concerned, at the southerly edge of this exhibit, there does not appear to be any river flowing into it, does there?

A. There does not from this map, no, sir, but you remem-
585 ber that map is not a very complete one.

Q. Not a very complete one.

A. No.

Q. Well, it is the main St. Louis County map that has been in use all over this country for about twenty-five or thirty years, hasn't it?

A. If you cruised that country you would probably find a good many streams that are not shown on that map, though.

(A short recess was here taken.)

By Mr. Bailey:

Q. Now, Professor, the bottom of Lake Superior is unquestionably composed of hills and valleys, submerged, is it not?

A. What soundings we have do not indicate a great deal of local relief. In a broad way it is made in the nature of a broad basin.

Q. As a broad proposition, the bottom of any lake is much the

same—as much the same, so far as the surface is concerned, as the land; it is simply land covered with water?

A. Yes.

Q. And has hills and valleys?

A. The irregularities of the bottom would depend to some extent on the history of the lake.

Q. Yes, certainly. And undoubtedly it is true that if the waters of Lake Superior were at some time very much lower than they are now, then, the rivers that flow into it had channels that extended out farther than they do now?

A. Yes, sir.

Q. And that would be true along the south shore as well as along the north shore, of course?

A. Yes.

Q. And yet you do not now consider that those old channels that are submerged are still rivers, do you, on the north and
586 south shores?

A. We do not find those old channels.

Q. Well, you have not looked for them, have you?

A. Well, the soundings do not seem to show them up.

Q. Well, they must have been there if the waters of the lake were substantially lower than now, must they not?

A. It is possible, yes.

Q. Now, you said, if I understood you, that you thought the action of the river had nothing whatever to do with the formation of these points, and I think you referred particularly to Minnesota and Wisconsin and Rice's and Connor's Points.

A. Yes, sir.

Q. You think it had nothing to do with it?

A. Practically nothing. It may have changed their shape by erosion to some extent, but not in deposition.

Q. It is true, is it not, Mr. Bean, that there is found a bar of some sort at the mouth of practically every river emptying into Lake Superior? I make one exception, that of the Temperance. Isn't that true?

A. I do not know the rivers on the North shore very well.

Q. There is no bar on the Temperance. So far as you are acquainted, that is true, is it not?

A. Well, I know the Lester River.

Q. There is a bar there, isn't there,—a small one?

A. A very small bar, but apparently the wave action keeps that pretty well swept away there.

Q. Now just let us talk about that a minute.

A. All right.

587 Q. You say the wave action keeps it pretty well swept away?

A. Yes, sir.

Q. Well, what forms it?

A. The two sources are material there—the alongshore current and waves, and the Lester River in time of flood does bring down a good deal of sediment.

Q. Then, you say the Lester River does have something to do with the formation of that bar, in your opinion?

A. It does; yes, sir.

Q. Now, if sediment is brought down the St. Louis River, why does not the St. Louis River likewise have something to do with the formation of the Points at or below its mouth?

A. Because the St. Louis River is not carrying that type of sediment down the lower course.

Q. What type of sediment?

A. The Lester River has a very heavy grade and is carrying in time of storm coarse material.

Q. What kind of material do you find at the mouth of the Lester River? Isn't it sand?

A. It is more likely to be gravel.

Q. The Lester River does not carry down that gravel, does it?

A. Quite a little bit in times of flood.

Q. The rest of it comes from the lake?

A. Yes.

Q. And yet the bar is formed by the gravel that comes from the lake and the sediment (or whatever it is) that comes from the river?

A. Yes.

Q. And the bar is formed just at the mouth of the river?

A. Yes, it is where the river drops its sediment on com-
588 ing into quiet water and also where the alongshore currents drop their sediment.

Q. The reason of it is because of the meeting of the current of the river and the washing (or whatever it is) of the lake?

A. Yes.

Q. So, the action of the river does have something to do with the formation of the bar?

A. Decidedly, I have not denied that.

Q. Why doesn't the action of the St. Louis River have the same effect in forming a bar at or near its mouth?

A. Because it is not carrying material sufficient to do anything.

Q. Well, what you mean then, I take it, is that in your opinion there is not any sediment comes down the St. Louis, but there is sediment comes down the Lester?

A. No, I do not mean that. You have to study each river by itself, each individual case. The St. Louis River is carrying finely divided silt.

Q. You just go ahead and tell in your own language why it is that you think the Lester River has something to do with the formation of the bar at or near its mouth, and the St. Louis River has nothing to do with the formation of the bar at or near its mouth.

A. The St. Louis River is a river, or, in the first place a small stream——

Q. You mean the St. Louis?

A. Excuse me. Lester Creek really is a small stream, ordinarily carrying very little water, in times of heavy rain carrying a
589 considerable volume. At those times it carries a considerable load of sediment, gravel and sand, and so on. That material

is carried out and deposited in the lake, and that would build up there a bar of considerable dimensions compared with the size of the stream, if the wave action were not so strong there. In the case of the St. Louis River, in its lower course, it has not a very strong current; the waters are ponded above, so that most of the silt is drawn out or lost in the quiet waters above, and when the stream gets down here it has nothing but finely divided sediment, which is not good material to make a bar.

Q. And that is your explanation of the reason why one river has a great deal to do with the formation of the bar and the other river has nothing to do with it?

A. Yes, just a difference in the two streams.

Q. Now, as a matter of fact, just up above Fond du Lac the St. Louis River flows over a rocky bed, doesn't it?

A. Yes, sir.

Q. And that is washed clean every time a freshet comes?

A. Yes, sir.

Q. So that all the sediment that comes down to that point is carried down this way?

A. Yes.

Q. And, as a matter of fact, the water of the Lester River is very clear and has very little sediment; isn't that so?

A. In dry times; not in times of flood.

Q. That is equally true of the St. Louis, isn't it?

A. Yes.

Q. They both have sediment in times of freshet?

A. Yes.

590 Q. Then, there is not any distinction in what the waters bring down, is there?

A. Decidedly.

Q. Well, what?

A. Difference in size of material that is being carried near the mouth.

Q. The bigger river carries the more material, doesn't it?

A. It may in some parts of its course, but in all streams you will find a difference in the size of material, dependent upon the volume and velocity of the stream.

Q. Well, did you mean, Professor, to say just what I understood you to mean, that the current coming out of the St. Louis River, in your opinion, had nothing to do with the formation of the bars?

A. Except as I have modified it, except for erosion of the bars and keeping openings there. The St. Louis River has been responsible for keeping the Superior entry open. If we had no stream entering this depression here the bars would have been built clear across and you would have had a tight entrance there.

Q. Do I understand that in your opinion, then, the meeting of the current from the river with the waves from the lake and causing a sort of still place there, has nothing to do with the formation of the bars?

A. Practically nothing.

Q. Practically nothing. And yet that is the cause of the formation of the bars at Lester River?

A. That plus alongside currents.

Q. Well, I confess I cannot see the distinction, but I guess you have put your explanation on the record. And you would say
591 that these other rivers up along the north shore, the Gooseberry and the Knife and the Baptism and the Sucker Rivers, where there are bars up there, you would say that the current from the river does help to form the bar at the mouth?

A. I do not know those streams at all.

Q. You do not find bars along the north shore of the lake except at the mouths of rivers, do you?

A. Yes, you get bars—I don't know the north shore, but you do get bars built along the shores of lakes, bars swinging around from one headland to another, enclosing a lagoon behind—strictly a lake deposition.

Q. Take the north shore of Lake Superior: you do not find bars anywhere along that north shore except at the mouths of rivers and streams, do you?

A. I told you I did not know of the north shore beyond Lester River.

Q. Isn't it a fact, Mr. Bean, that the St. Louis River and its tributaries, the Cloquet and the White Face and the other streams that flow into it, make it, as it flows into Lake Superior, the muddiest river that flows into the lake anywhere? Isn't that a fact?

A. I do not know; that is, I do not know the actual amount of silt carried by some of the other streams. The Bad carries a pretty heavy load of silt.

Q. The Bad River?

A. Yes. And I do not know enough about the relative volumes of silt carried by the other streams to answer that question.

Q. Well, you do know that the St. Louis is a pretty muddy river and carries a good deal of sediment?

592 A. It carries a good deal of finely divided silt, yes, but that is not the kind of material that makes Minnesota Point. Minnesota Point is made of sand and coarser material.

Q. Yes, to a considerable extent.

A. And if you were to take a sample of the waters of the St. Louis River here in the bay you would not get any sand or gravel in your sample.

Q. Is not the bottom of the bay, or of these bays up here, full of sand and gravel?

A. Much of that sand and gravel that you get below the silt is of an earlier origin.

Q. Well, go up there anywhere in the bottom of the bay now; don't you find sand and gravel there?

A. Not directly on the bottom, as I understand it.

Q. Well, where?

A. Underneath the silt.

Q. Underneath the silt?

A. Yes.

Q. How far underneath?

A. I cannot give you that information.

Q. A foot or so, something like that?

A. I have not studied the borings in the bay to give you that information.

Q. And the third reason you gave for considering this a river clear down to the Superior entry was because there was a definite current passing out of the Superior entry, as I understood you?

A. Yes.

Q. Well, there is a definite current passing out where any river flows into a larger body of water, isn't there, and for a considerable distance up?

A. Quite frequently that is the case.

593 Q. And you find a definite current for a considerable distance out in the larger body of water, do you not?

A. In many rivers that is true.

Q. And the larger the river the farther the current extends into the larger body of water; is that not true?

A. Yes, that in general is true.

Q. And possibly it would extend farther the steeper the descent, as it entered the larger body of water?

A. Yes; of course the volume of the stream is important in that, too.

Q. Yes; I say the larger the river.

A. You said the steeper the descent.

Q. Well, I meant that in addition.

A. The volume of the stream is really of as much importance as velocity.

Q. So that, assuming just for a moment that our theory is correct, the St. Louis River being the largest stream that flows into Lake Superior, you would expect to find the current extending into the main body of the lake much farther than a smaller stream, wouldn't you?

A. Yes.

Q. Take the St. Louis River up above Fond du Lac: the water is practically the same color as the Lake Superior water, isn't it? Not quite so clear, perhaps, but about the same color?

A. As I remember the St. Louis waters farther up stream, there is more of a tendency to be a brownish or yellowish color to them.

Q. When did you look at them—in the fall when the leaves are turning?

A. Well, most of my experience on the St. Louis has been in the spring and fall.

594 Q. The water in the spring is the ordinary rain-color, isn't it?

A. No, that has not been my experience.

Q. Well, what is it?

A. It has a tendency to have at that time a somewhat heavier load of sediment and be of a dirtier color than it is later on when its drainage is coming off more lightly, by seepage.

Q. The color is black, isn't it—dark?

A. It is a dark color, yes; it is not clear.

Q. You do not find much clay color in it up there, do you,—up above Fond du Lac?

A. No.

Q. No yellow color?

A. Well, I should say it is a yellowish color. I don't know that "yellow" quite describes it. It is a color that I should ascribe in part to sediment and in part to organic matter.

Q. Have you been up to the reservoir formed by the Great Northern Power Company dam at Carlton?

A. Yes.

Q. Isn't that water quite as dark as the water in Lake Superior?

A. To my mind—it has been a good many years since I have been at Carlton—it is not the same color.

Q. It is just as dark, isn't it?

A. Why, there is a difference in the two bodies of water there, it seems to me.

Q. Well, just answer the question.

A. No.

Q. It is not?

A. Not as I remember it.

Q. You do not find any clay color in the water, do you?

A. You would not expect to.

Q. I say you do not find it; do you?

A. No.

595 Q. Now, this discoloration that you speak of out in the lake, that is what you call a clay color, isn't it—light clay color?

A. It is a yellowish color.

Q. Very pronounced?

A. It is striking in contrast with the lake water.

Q. Don't you know it is a fact that that is caused almost entirely, if not entirely, by reason of the dredging and the depositing of materials out there, that have been deposited from the dredging of the channel that the government put in up through these bays?

A. I don't know as I caught your question.

Q. Well, you know that the government has dredged a channel from the Superior entry clear up through these bays, up to Big Island, and I don't know but beyond; don't you?

A. Yes.

Q. And quite a deep channel?

A. Yes.

Q. And that it has done quite a lot of dredging in the slips around, and private parties have done a lot of dredging in these slips around?

A. Yes.

Q. To form docks?

A. Yes.

Q. And that all that material has been hauled out just a little beyond the Superior entry and dumped?

A. Yes.

Q. You know that, don't you?

A. I do not know the exact place of the deposition of that material.

Q. And also in front of the Duluth entry; it has been hauled out there; you know it has been hauled a little ways out?

A. Yes.

Q. And dumped out there?

A. Yes.

596 Q. And that that material is largely clay, yellowish clay?

A. Silt.

Q. Yes, silt. We common people call it clay, but we will call it silt.

A. There is a little difference in the size of the material, that is all.

Q. But there is not any difference in color?

A. Not a great deal, no.

Q. I say you know that has been hauled out there?

A. I know they have dredged; I do not know where they have dumped it.

Q. And whenever there is wind or the stirring of the waters by reason of what we call a "northeaster," why, that material is, by the action of the waves, turned up and the water discolored out there, isn't it?

A. Yes.

Q. So, that is the real reason for the discoloration of the water that you see there at times, rather than any discoloration from the water that comes down the St. Louis River, isn't it?

A. No; I don't think you have caught the idea of what I was describing.

Q. All right; let us hear what you have to say.

A. The discoloration of the water in the Superior entry has a very definite relationship to the Superior entry. There is a lobe of discolored water right opposite the Superior entry, out into the lake, and apparently, so far as known, and to my notion, the source of that material is directly from the St. Louis River. Whether that

597 material comes from the stirring up of the waters here and carrying out that fine silt by the river or not—I don't know the source of it.

Q. You are not prepared to say there is enough difference in the color of the water up there above Fond du Lac and the water of Lake Superior so that you would see that, if it did not pass through these waters that have been commercially dredged, would you?

A. Why, a stream usually has——

Q. No, just try to answer the question, please.

A. What is your question?

(The question was read by the reporter.)

Q. No, that is not quite right. I say you are not prepared to say there is enough difference in the color of the water in St. Louis River above Fond du Lac and the water of Lake Superior, so that there would be any noticeable difference at the Superior entry, if it were not for the fact that it passed through these waters that have been commercially dredged?

A. I think the stream must derive a certain amount of sediment from the dredged waters here.

Q. Certainly. And if it were not for that fact you probably could not see any discoloration up there?

A. Probably not.

Q. You find there at Grassy Point, close to the surface, the same kind of material that you do on Rice's Point or Connor's Point, don't you,—substantially the same kind?

A. I was unable to find from my studies of Grassy Point any exposures that made me think they were not man made. There was such a filling of sawdust and bark and slabs there that I am
598 not sure what the underlying material is.

Q. You do not know whether in the early day—and I mean by that not thirty thousand years ago, but within the memory of people who are living here now—that was a swamp, do you? Grassy Point.

A. I should suspect that Grassy Point, just from the general appearance of it, and the fact there has been so much filling there, must have been a pretty swampy place.

Q. Practically swamp all over there?

A. Yes.

Q. The surface there is quite different from the natural surface of what we might call the main land, isn't it?

A. I do not know enough about the underlying material there to answer that question.

Examined by Attorney-General Smith:

Q. Do you know, Professor, where the north and south line between Wisconsin and Minnesota strikes the St. Louis River?

A. North and southline between ——?

Q. Minnesota and Wisconsin, strikes the St. Louis River.

A. I have never been there.

Q. Have you been up to Fond du Lac village?

A. I have been there, but I did not have the boundary in mind at all when I was there.

Q. You know that it is up-stream from Fond du Lac village?

A. I judge so, from some of the testimony yesterday, but I do not know anything about it as a matter of fact.

Q. Have you made any examination of the St. Louis
599 River in and above Fond du Lac?

A. Except at Thomson.

Q. Except where?

A. At Thomson.

Q. Thomson is farther up than Fond du Lac some ways, isn't it?

A. Yes.

Q. And there are rapids to a considerable extent between Thomson and Fond du Lac?

A. Yes.

Q. Then, your investigation of the river at Thomson would not be a fair investigation of the river, and you would not draw any

conclusions as to the river at Fond du Lac from your examination of it at Thomson?

A. No, except that much of the silt is probably taken out of the waters of the St. Louis at Thomson by the dam.

Q. Thomson is a place where the dam is constructed, from which the power comes that lights the city here, isn't it?

A. Yes, sir.

Q. How short a distance below Fond du Lac have you examined the river?

A. Why, I am only familiar with the river from Superior up to the Steel Plant.

Q. How much of a descent is there between the Steel Plant and the lake?

A. Very slight, if any.

Q. Have you ever examined, in the vicinity of the Steel Plant, the old bed of the St. Louis River existing before the tilting of the east end of Lake Superior?

A. I have not.

Q. Have you any idea how deep the old bed was, covered by the water which was set back from the tilting of the east end of Lake Superior?

A. Except that some of the engineers up there told me
600 that they found considerable beds of the gravel and clay and so forth in their excavations, but I never was there when the excavation was going on.

Q. They also told you they had found stumps in the same region, did they not? Did they ever tell you that?

A. They did not tell me that, no.

Q. You have heard of that?

A. I have never heard of the stumps at the iron plant, no, sir.

Q. Did you hear the testimony yesterday, with regard to the stumps being up there in that region?

A. I understood in the testimony yesterday the stumps were down this way farther.

Q. And also up on the St. Louis River. Then, you do not know anything about the old bed of the St. Louis River, that was covered up at the time of the setting back of the water, up to that point?

A. No, sir.

Q. How deep is it your opinion that, in the vicinity of the Steel Plant, the water was set back?

A. I do not know.

Q. You have no opinion?

A. No.

Q. Well, you have an idea, some idea, haven't you, of how much the water set back there?

A. As I told you, I did not get enough definite information from the Steel Plant people to form a definite opinion.

Q. Didn't you make an examination of the river there yourself?

A. Slightly, yes.

Q. Do you know how much area the river and the tributary bays to it cover between the Steel Plant and Fond du Lac?

601 A. No.

Q. You have been over that portion of the river?

A. No, I am not familiar with the river above the Steel Plant.

Q. You know that it is navigated up to Fond du Lac?

A. Yes, sir.

Q. And that for certain purposes it has been for a long time navigated up to Sandstone quarries above Fond du Lac, don't you?

A. Yes, sir.

Q. Have you ever made any observations as to the character of the water in the river at the Steel Plant?

A. Except just the observations that I would make in traveling over in a canoe.

Q. Never noticed anything peculiar?

A. Except that they were colored, and such a color that you would not consider them for drinking purposes, ordinarily.

Q. What would be the difference between the character of the water at the Steel Plant and at Thomson?

A. My observations of the river at Thomson and at the Steel Plant were so far apart that I would not want to answer that question.

Q. They were not made under the same conditions?

A. No.

Q. Your observations. How far is it from Big Island to the Steel Plant?

A. I could not tell you that.

Q. Have you ever visited Spirit Lake?

A. Yes, I have been through it.

Q. That is to some extent a settling plant, isn't it, for waters to get into?

A. Yes.

Q. The open channel into Spirit Lake by nature was from the direction of Lake Superior, wasn't it?

602 A. I did not get that question.

(The question was read by the reporter.)

A. I do not know as I understand your question.

Q. Well, there is now a little channel from the southwesterly, I would say, into Spirit Lake; isn't there?

A. As I remember it, yes.

Q. Well, you have examined your maps of that region?

A. Not recently.

Q. Well, don't you as a matter of fact know that there was no entrance whatever at Spirit Lake by nature except from the eastward?

A. Could I look at a map?

Q. What?

A. Would you just as soon let me look at a map and ask those questions.

Q. Yes, if you can find a map there.

The Commissioner: Look at the Meade map.

Attorney-General Smith: There was a map made before the Meade map, as I recall it.

(The witness refers to one of the maps in the case.)

Q. Here is Spirit Lake (indicating); there was no connection there?

A. You mean connection across?

Q. Yes; except made later, and artificially.

A. There is a slight suggestion, Mr. Smith, that the deeper water here——

Q. That is in Spirit Lake?

A. Yes.

Q. But this land was unbroken, wasn't it, right around here, as you understand it, all the way from that point right there, clear around? (Indicating.)

A. Apparently so.

603 Q. Did you hear Mr. Martin's testimony of how deep the water would run back from the lake in heavy winds?

A. I did.

Q. Now, that amount would carry the water up to the Steel Plant, wouldn't it?

A. I do not know.

Q. Do you know anything about the variations of the volume of the St. Louis River, in times and seasons?

A. I read, a number of years ago, something about the fluctuations in volume, but I do not remember the figures at all now.

Q. At what time of the year were you up at Thomson?

A. I was up there in May.

Q. Was that before or after the spring flood had begun to come down the river?

A. When I visited Thomson I was interested primarily in the rock outcrops, and we spent all our time on the outcrops; so, my interest was entirely in rocks rather than in rivers.

Q. And you have continued such interest since?

A. To a large extent.

Examined by Mr. Fryberger:

Q. Now, Mr. Bean, I want to ask you with reference to the definition of a river. You define for us a river, your idea of a river.

A. A river is a body of water or stream of water flowing through the land, a stream which usually has banks and a more or less defined current.

Q. Well, what do you mean by "usually has banks"? Did you ever know of a river that did not have banks?

604 A. Well, perhaps I had better say that has noticeable banks. If you take the Mississippi River, for instance, your bluffs are at some distance from the river, but you are likely

to find a general control of the river by banks, to get far enough away from the flooded plane.

Q. There are always banks to a river, aren't there? Is there any place where you have observed a river without banks?

A. Well, I don't think of any that did not have at least low banks.

Q. Now, as a matter of fact, isn't there a continuous current from the source to the mouth of a river? Isn't that one of the characteristics of a river?

A. Yes.

Q. So, where a body of water has a current, sometimes one way, sometimes up and sometimes down, you would not ordinarily call that a river, would you, that body of water?

A. If it had the other characteristics of a river I should.

Q. If it had the other characteristics of a river?

A. Yes.

Q. Now I want to read to you the definition of a river as given by Major David C. Huston, Major in the United States Army, Corps of Engineers, and being the same definition that I called Mr. Martin's attention to, and I want to ask you if you have any criticism as to that definition. "A river properly is one where the current is always from its source towards its mouth." Now do you differ from that?

A. I think that is a little too narrow a definition.

Q. Don't you think that is the commonly accepted idea of a river, by people generally in this country? I am not talking
605 about geologists; I am talking about people in general.

A. The very fact——

Q. Just answer the question.

(The question was read by the reporter.)

A. No.

Q. You think not. Then, you think that the Major was wrong in that definition?

A. In part.

Q. You realize, don't you, that he was a man that was in charge of this work here at the head of the lakes for three years?

A. I do.

Q. And of education of course, or he would not occupy that position.

A. Certainly.

Q. But you think he was wrong. Now let me continue his definition, or, rather, his description of the St. Louis Bay. "Near the mouth where it empties into large bodies of water, such as the ocean or any large body where the surface rises and falls, the current is affected by this rise and fall of the larger body of water and the tides, so that we have the river proper where the current is always from the source down, and the tidal department where the direction of the current varies, and where the cross-section of the water is not due to the river proper." Have you any criticism to offer to that?

A. That statement is true.

Q. That is all true, is it, and you agree with it?
A. Yes.
Q. That is where the water rises, he says, owing to the tide and flows back; that is not a river? You agree with him on
606 that?
A. That is not what he says.
Q. Well, I will read it again, and I wish you would pay close attention to it, please. "Near the mouth where it empties into large bodies of water, such as the ocean or any large body where the surface rises and falls"—the surface rises and falls here in these bays, does it not?
A. It does.
Q. Well, he says in that kind of a case it is not a river, doesn't he?
A. Read the statement.
Q. "The current is affected by this rise and fall of the larger body of water and the tides, so that we have the river proper where the current is always from the source down." Do you understand that?
A. Yes, sir.
Q. Do you agree with that?
A. Yes.
Q. A river, as you understand his statement, is one where the current is always down; isn't that true?
A. Yes, sir.
Q. The current is always down in these bays, is it?
A. No.
Q. Well, then, do you agree with his statement?
A. You have not finished the statement yet.
Q. Well, do you agree with it that far?
A. I agree in the sense with what he says, that there is a part of the river where the current is always down.
Q. "And the tidal department where the direction of the current varies, and where the cross-section of the water is not due to the river proper." Now this river, the St. Louis River has nothing to do with the level of the water in the bay; is that true?
A. Very little.
607 Q. If there was an opening there the lake would create the same level in the bay that exists now if there was no St. Louis River?
A. Yes.
Q. "That is, due to the water which properly comes from the river. These bays into which rivers empty are not due, their physical formation is not, to the river; they are generally due to other causes. The bay of Superior is a body of water, the level of which is affected by the level of Lake Superior; so I do not consider the mouth of the bay of Superior as the proper mouth of the St. Louis River in a scientific sense. I would place the mouth of the St. Louis River proper several miles above Rice's Point, because the current, the up stream current caused by the lake, extends several miles above that point at times, and the formation of the stream, its banks, is evidently due to the action of the lake in that portion." Now, don't

you understand that Major Huston contended and stated that, in his opinion, Superior Bay, upper and lower Superior Bay, were bay and not river because the current did not flow continuously one way? Don't you understand that from his statement?

A. I understand his statement.

Q. Now do you agree with that?

A. I do not.

Q. So, in your opinion he was wrong when he said that those bays did not constitute a river?

A. He was.

Q. And the fact that this man, competent engineer, Major of the engineers of the United States Army, made this statement, does not shake you in your opinion in the least?

A. It does not.

608 Q. And the fact that he had charge of this work and worked in these waters for three years does not change you or shake you in your opinion in the least?

A. It does not.

Q. How old are you?

A. Thirty-five.

Q. Now I want you to listen to this question and answer it. "Q. What point would you fix as the mouth of the river? A. In the neighborhood of twelve miles above Rice's Point. Not attempting to fix it definitely, I would fix it at that point where the current ceases to be affected by the oscillations of the lake." Now do you agree with that?

A. I do not.

Q. You think he is wrong again?

A. I do.

Q. Just as long as there is a current and there are banks you claim there is a river?

A. I do, in general.

Q. What is that?

A. I do.

Q. Well, take the case of the Chesapeake Bay, The Susquehanna River runs into the Chesapeake Bay, does it not?

A. It does.

Q. Where is the mouth of the Susquehanna River? At the point where Chesapeake Bay opens into the ocean, or 150 miles or so above that point.

A. I am not familiar with Chesapeake Bay, but I should think it would be up the bay considerable.

Q. Well, you would think it would be at the exact point where that river puts into what we know as Chesapeake Bay, wouldn't you?

A. Well, my answer would be determined in a large measure by what the soundings show there and what the current is, and so on. I am not familiar with that situation.

Q. Isn't Chesapeake Bay a well-known bay?

A. Yes.

609 Q. How wide is it?

A. Oh, forty or fifty miles, I should say.

Q. Well, no one ever calls that a river in this country; do they?
A. No.
Q. You never heard it called a river, did you?
A. No.
Q. You learned about Chesapeake Bay when you went to the common school, didn't you?
A. Surely.
Q. Never heard it called a river yet, and you are not prepared to say it is not a river because you do not know the soundings?
A. I do not know the history of the bay.
Q. Did you ever read the Enabling Act creating the State of Wisconsin, the boundary of the state?
A. I have.
Q. Well, isn't it purely a matter of geography and not of geology where that boundary is?
A. Yes.

Examined by Mr. Bailey:

Q. Just a question, Mr Bean. Just suppose that a canal was dug from Carlton over to the Mississippi River, so as to divert all the waters of the St. Louis River at that point, so that none came down this way at all. The water in these upper and lower St. Louis Bays clear up to Big Island, the head of Big Island, would still remain approximately at the same height, wouldn't they?
A. Yes.
Q. And there would still be an in-flow and an out-flow to the Superior entry?
A. Due to those causes mentioned, that is, winds and so on.
Q. Yes.
A. Yes.

610 Q. Would you consider Lake Peppin, what is known as Lake Peppin I will say, to be a river rather than a lake?
A. As far as its history is concerned it is a river.
Q. That is, geologically speaking you consider it a river?
A. Geographically speaking, too.
Q. Well, you are a geologist, aren't you?
A. Yes.
Q. Well, do you pretend to speak from a geographical standpoint, in a scientific way?
A. Well, geologists are very frequently students of geography also.
Q. Well, politically speaking, then, it is not known as a river, is it? It is known as a lake?
A. It is known as a lake.
Q. And it would be known as a lake, ordinarily, in any acts of Congress or anything of that sort?
A. Yes.
Q. What?
A. I should think so, yes.

Q. And it would be considered a lake and known as a lake in judicial decisions, you would think, too, wouldn't it?

A. Yes.

Q. And geologically speaking you would consider it a river?

A. In its history.

Q. It is in the same sense that you are testifying that these bays are a river rather than an arm of the lake?

A. No, not quite the same.

Mr. Bailey: All right; that is all.

Examined by Attorney-General Owen:

Q. You understand the constitutional boundary lines of this state, do you not?

A. Why, I have read the description of the boundary line.

611 Q. Does it say anything about the boundary line running through Lake Peppin?

A. I do not remember that particular place in the boundary.

Q. You have never heard of that in the boundary line, have you?

A. I don't remember it; no, sir.

Q. Or Lake St. Croix, either?

A. No, sir.

Q. So that if Lake Peppin is not a part of the Mississippi River, we have not any boundary between the State of Wisconsin and the State of Minnesota through that body of water?

A. No.

Q. So, politically speaking, as well as geographically and geologically, wouldn't you say that Lake Peppin was a part of the Mississippi River?

A. Is a part of the Mississippi River?

Q. Yes.

A. Yes.

Q. Now, you were asked questions about Lake Vermilion, but I think you were not permitted to testify as fully as you would have liked with reference to that lake. Are there some comparisons between Lake Vermilion and these waters known as the Bay of St. Louis and the Bay of Superior that you would like to make, that you were not permitted to make?

A. The history of Lake Vermilion is the history of a drowned valley or depression due to the glacial interruption of waters; but the shape of some of those bays is different from the shape of some of the bays that are tributary to our bays here, largely due to the fact that many of those were just irregular depressions of the land into which the water backed up, giving an irregularly shaped de-

612 pression, that lacks much of the valley shape that is characteristic of the bays tributary to this bay. It is a difference in the history of original feature there.

Q. You say that there is a difference in the indentations?

A. Yes; their general shape is more irregularly shaped, sometimes V-shaped, broadly V-shaped, sometimes U-shaped, and so forth, depending upon the original topography there, which may not have

been a definite valley at all, but just an irregular depression in the land. In case of the tributary bays here, we had definite valleys into which the water backed, and we had definite ground, tributary valleys, giving that typical shape.

Q. It was your statement that the waters of the river had nothing to do with the formation of these bars out here?

A. It was.

Q. You base that on the fact that you find no river material in those bars; that all the material that is found in those bars is lake material?

A. It is characteristic of lake material, sir.

Q. Consisting of sand and gravel?

A. Yes.

Q. And that, you say, is formed by the currents of the lake?

A. The alongshore currents.

Q. The alongshore currents?

A. And wave action.

Q. Now, you were asked whether there were not bars formed at the mouths of nearly all the rivers leading into Lake Superior. Permit me to ask you whether you find bars at any place other than the mouths of rivers along the shores of the lake?

A. You get bars, crescent-shaped bars, very frequently,
613 extending from headland to headland along a shore, due entirely to the alongshore current, and have absolutely no relationships to any streams.

Q. So that you do not necessarily have to have a mouth of a river in order to have the bar form in the lake?

A. No.

Q. Do you think that the current of the river coming down had any influence on the alongshore currents?

A. No.

Q. So that Minnesota Point and Wisconsin Point would have been built up if there had not been any St. Louis River, just the same?

A. Yes.

Q. Now, you were not permitted to state very fully the difference in the color of the water that you saw at Thomson and the color of the water in the lake. Now I will ask you to state, as fully as you desire, the difference you observed in the color of the water at Thomson and the color of the water of Lake Superior.

A. As I remember the color of the water at Thomson, it had a slightly yellowish color, which I at that time ascribed to a stain, an organic stain of vegetation. I remember dipping up some of it and examining it for sediment, and mentioned at the time that it was practically devoid of sediment, and of course I ascribed that to the fact that it was ponded water, and whatever sediment had been carried by the river upstream had been lost there in the reservoir. And so my idea is that that water there is of a yellowish color, in large measure due to organic matter. The general color of the water, the mass of the water, is rather dark, as all such waters are.

614 Q. What color do you call the waters of the lake?

A. Sir?

Q. What color do you call the waters of Lake Superior?

A. Well, it always seemed to me that the color varied somewhat with atmospheric conditions, giving sometimes a blue and sometimes a greenish cast to the water. I think atmospheric conditions and light conditions seem to affect the color to some extent.

Q. Does it ever have a muddy color, the muddy appearance, that the waters of the river have, except where the river is emptying into it?

A. Except where the river is emptying into it and where there is a fringe of colored water. When there is a northeaster you will find a fringe of water along Minnesota and Wisconsin Points, where the waves are turning up the sand, and give a slightly yellowish color to the water.

Q. Do you know of any river in South America which part of the time flows into the Amazon River and part of the time into the Orinoco?

A. Yes.

Mr. Fryberger: The River of Doubt that Roosevelt discovered.

The Commissioner: Is that material?

Attorney-General Owen: According to the Major's testimony here, it could not be a river if it flowed one way part of the time and the other way part of the time. That is the materiality of it.

Q. What is the name of that river?

A. One of them is the Cassiquare.

Q. Is there more than one?

615 A. There are two streams heading on a low divide there between the Orinoco and the Amazon, and in times of high water, or due to heavy rains, there is a reversal of drainage. Sometimes the southward flowing stream flows north over the low swampy divide to the Orinoco, and sometimes the northern tributary flows southward to the Amazon.

Q. Now, according to the Major's testimony here those would not be rivers at all, would they?

A. No.

Q. As you understand it.

A. Not as I understood his definition.

Q. When you speak of a current in the river, do you mean the action of the water that is precipitated or created by storm?

A. No.

Q. What do you mean by the "current"?

A. I mean the actual flow of water due to gravity, whether it is visible in ripples or just a quiet, steady flow that can hardly be determined.

Q. Under normal conditions?

A. Under normal conditions; yes, sir.

Q. And that is the current that, in your opinion, stamps that water as a river?

A. As a river; yes, sir.
Q. Now, there is a current down the Mississippi River, isn't there?
A. Yes.
Q. It is a fact that the wind blows hard enough on that river sometimes so that objects on the surface flow upstream?
A. Drift upstream.
Q. According to the Major's definition of a river, that
616 would not be a river, would it?
A. No, not that portion of the river.
Q. No. And there is running through the Bay of St. Louis and the Bay of Superior a current towards Lake Superior, entering Lake Superior at the Superior entry?
A. There is.
Q. And the fact that at times the wind blows hard enough on Lake Superior so that objects flow up the river instead of down, in your opinion does not change the fact that those waters are part of the St. Louis River?
A. I think not.
Q. Have you had occasion recently to examine the Carnegie dock at Grassy Point, on the Minnesota side?
A. I have.
Q. How long ago?
A. On the 6th of August, 1917.

(A recess was here taken until two o'clock P. M.)

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August 8, 1917, 2 p. m.

Redirect examination.

By Attorney-General Owen:

Q. Just as we adjourned I think I asked you, Professor, if you had had occasion recently to visit and look over the Carnegie Dock above Grassy Point on the Minnesota side.
A. My answer was, on August 7, 1917.
Q. You were at the dock?
A. I was.
Q. Did you observe on the dock any line indicating a boundary line between the State of Wisconsin and State of Minnesota?
A. I observed a line made by cutting out the cement and filling in with tar with the abbreviation "Wisconsin" on one side and "Minnesota" on the other, in letters nine or ten inches high, I should say.

Mr. Fryberger:

Q. What were the letters?
A. "Minn.", abbreviation for Minnesota, and "Wis." Wisconsin.
Q. At what point on the dock was that line?
A. That was about two-thirds—From the up stream side of the dock, about two-thirds of the length of the dock out from the Minnesota side. Taking that line about one-third of the dock would be on the Wisconsin side of that line and two-thirds on the Minnesota side. That's a rough estimate. I didn't pace it off.

Q. Was that line drawn about the place that the old channel would go down through there?

A. Just about as near as we could tell from maps and general appearance of,—well, the small islands and so on in the bay.

618 Recross-examination.

By Mr. Fryberger:

Q. Who asked you to go and look at that dock, Mr. Bean?

A. The purpose of being over there was merely to look at Grassy Point.

Q. (Question read).

A. No one asked me to go and look at the dock.

Q. Well, did someone tell you who put those marks there?

A. After I was on Grassy Point someone told me that the marks were there.

Q. Who put them there, officials from the City of Superior?

A. No, sir.

Q. Who did put them there, do you know?

A. This is hearsay evidence. Do you want hearsay evidence?

Q. Just someone on the dock told you?

A. Yes, sir.

Q. That is all you know about it?

A. That is all I know about the origin of the marks.

Q. Let's have that; let's have hearsay evidence or anything else. We want to know all you know about these marks.

A. A young man around the office of the Carnegie dock—there is an office right near the Duluth end of the dock. I think that is the Carnegie office. He told me that there were marks down there, described the marks to me and said that the chief mechanic of the Carnegie Dock Company put those marks in.

Q. The chief mechanic of the Carnegie dock?

A. Yes.

Q. Were they done for the purpose of locating the line for
619 making the assessments on the personal property for Superior?

A. I asked him about that and he said as he understood it some engineers whom he didn't know gave the chief mechanic the location about two years ago.

Q. Those engineers came from Superior, didn't they?

A. I asked him about that, and he was under the impression, he didn't know, he was under the impression that they were United States men, but he didn't know about that.

Q. What do you think about that; haven't you heard from Mr. Gard or some of these men?

A. I haven't heard anything at all.

Q. You haven't heard a word from any of the attorneys connected with the case?

A. I have not.

Q. Haven't you heard from somewheres that they were Wisconsin engineers?

A. No, sir. The marks and all about them were entirely new to me. I never knew there were any marks there till I got over to Grassy Point Monday afternoon.

Q. What did you go over there for?

A. To examine Grassy Point. We circled around the dock to get up the back end of Grassy Point to look around with relation to the bluff.

Q. You only saw them on one side of the dock?

A. Just on one side.

Q. Did you know that there had been assessments made on both sides in both states, of the property?

A. I did, yes, sir.

By Mr. Bailey:

Q. Mr. Bean, you have said several times that you think certain parts of these waters was river, partly because of the channel,
620 the drowned channel?

A. Yes, sir.

Q. Have you ever made any examination of the river, taken any soundings?

A. I have not.

Q. Or taken any soundings either of the lake or the river, yourself?

A. I have not.

Q. And so what are you basing your testimony on?

A. On the United States Hydrographic maps.

Q. What one, the Meade map?

A. No; the more recent maps.

Q. Then do you refer to the dredged channel?

A. I refer particularly to the old meandering channel that is shown by the line of soundings, and of course you can follow something of the history of the river by studying the older charts. The Meade map shows it quite clearly.

Q. Now then, just step down here. Now referring to Minnesota's Exhibit 1, which is the Meade map, you don't find any channel through what we have spoken of here as lower St. Louis Bay, except for a short distance, do you?

A. We find a rather definite channel here to the east of Grassy Point and a somewhat shallower channel, evidences of it, in good shape to the north of Grassy Point and on down towards Rice's Point we find the same channel picking up, going out between Rice's Point and Connors Point, find the same thing continuing out.

Q. The channel you say picking up down here has been entirely lost between the points you left off and the point you started in?

A. Almost entirely lost. There is a slightly deeper place in one place.

621 Q. The slightly deeper place you speak of comes across——

A. If you take across section here you find a depth of nine here as compared to seven here (indicating).

Q. You find eight and nine over here at the south side just as often as you do eight and nine at the north side?

A. Yes.

Q. So that that indicates the channel is lost is between?

A. Pretty well filled up.

Q. So that so far as the channel proposition is concerned here you don't find any river in lower St. Louis Bay, do you?

A. Yes, sir.

Q. Not on the theory that you have spoken of?

A. You find that that channel is in part filled up in places.

Q. That is the earliest map with any soundings on that you know anything about, isn't it?

A. Yes.

Q. And you have rather located the channel along towards the northerly shore that you speak of, haven't you?

A. Following the line of deeper soundings which seems to indicate the old channel.

Q. Then you haven't seen this old Bayfield chart that shows a line of soundings along the south shore in these same waters?

A. I haven't looked at it recently, no, sir.

Q. Suppose you take a glance at that and find the soundings along through the south—it is Minnesota's Exhibit 7—you find the line of soundings going along near the Wisconsin shore, don't you?

A. Yes; but that is just one isolated group of soundings taken up here.

622 Q. The Meade map is the only map that you have to base your testimony on as to soundings, at all, unless it is this Bayfield map, and the Meade map doesn't show any channel?

A. Yes.

Q. And such channel as the Bayfield chart shows is along the south shore. So what have you got to base any testimony on that there has been any filling up there?

A. The Meade map and practically every other hydrographic map published since shows the channel somewhere in these waters.

Q. You said the Meade map shows it was filled up?

A. For a short portion.

Q. You don't know anything about what was there before the Meade map unless you take the Bayfield map?

A. You don't find when a channel has been submerged that that channel is preserved perfectly throughout its length. You will find places where it is filled up, places where it is more or less preserved.

Q. Isn't it entirely possible that the channel that you find on the Meade map from about Rice's and Connors Point out to Minnesota Point, on your theory was made after those points were formed?

A. That might be. There was a good deal of scouring after the points were formed.

Q. That part of the channel wasn't an old bed of the river, then?

A. It is the present course of the river. We don't know whether it's the bed of the old river or not.

Q. So far as you know it might be inwash and outwash of the lake when the wind and the tide blows the water in?

A. It might be possible.

623 Q. But you can't tell?

A. Can't for sure.

Q. You said that the material that you found in these points of land each side of Wisconsin and Minnesota Points was lake material as distinguished from river material?

A. Yes.

Q. That would tend to indicate that there must be lake waters to precipitate from if that material was precipitated?

A. The bars were built up from the lake side.

Q. So it is really the lake that built the bars?

A. Yes; the lake is building the bars.

Q. You have testified, I believe, that you were in the Geological Department of the State of Wisconsin?

A. State Geological Survey, yes, sir.

Q. And this Minnesota Exhibit 50 is a publication of your department, is it not?

A. It is, sir.

Q. And I presume that you agree with Professor Martin, who was on the stand, as to the accuracy of such surveys as to boundaries?

A. In so far as geological information is concerned.

Q. He testified as to the boundaries, too, that such maps were very accurate as to boundaries; you agree with that, do you?

A. No, I wouldn't agree that that map was necessarily accurate as to boundaries. Mr. Martin was not testifying with relation to that type of map.

Q. Your department at the present time is a part of the United State Geological Survey, is it not?

A. It is not.

Q. How is it connected with it?

A. Independent entirely. We are a state organization entirely.

624 Q. Don't you operate with them at all?

A. We do some work in co-operation with them, but are entirely independent of them in our work.

Q. You are independent in the sense that the state pays?

A. The state pays and we have our own organization directing the work, and do work in the state that we are interested in, regardless of the United States.

Q. But you do work in co-operation?

A. Topographic maps are made in co-operation with the United States Geological Survey.

By Mr. Fryberger:

Q. Is it your contention that your work as a state geological survey is less accurate than the Government?

A. Not necessarily. I do contend that this map was made very

long ago; that the features that are brought out on that map are general features of geology on the Reconnaissance map and with no intention to show details or river courses any more, I suppose, than were shown on the original Government survey.

Q. How do you know what the intention was? It was done before your time?

A. It was. We can get some idea by knowing the methods of doing the field work. I know that a good deal of that work was done by pack, by cruisers, going through the country and visiting rock outcrops.

Q. What about the work that was done around Lake Superior at that time; was that done by cruisers too?

A. I am not sure that the men that made that map visited Superior, simply because there were no outcrops in Superior that they would be interested in.

625 Q. Don't you think that they got the information from the United States Geological Survey?

A. I don't suppose so.

Q. Why wouldn't they?

A. Because the United States Geological Survey had practically no information about the geology of this country at that time.

Q. When was it made?

A. I think the field work was done about 1877 to 1881.

By Mr. Bailey:

Q. They didn't make the map before they did the work?

A. No, sir.

Q. The map was made in 1877?

A. The map was published in 1877. That is, the information was gotten in shape for publication and filed in the State Capitol a number of years before they published it. It was quite an extensive undertaking and they had to wait for money to do it.

Q. What do you mean that the field work was done from '77 to '81?

A. The actual making of the map was done from '77 to '81 and then they got the maps in shape. The field work was done.

Q. When?

A. From '77 to '81, these are approximate dates.

Q. Do you think the map itself was not actually gotten out until 1881?

A. I can't give you the exact date of making the map but I do know that that general group of information was held up, was not published until later, because of lack of appropriations.

Q. If it appears that this was published in 1877, the field work must have been done before that?

626 A. Are you sure that it was 1877 that it was published?

Q. That is the testimony; Mr. Buck testified to that.

By Mr. Hanith:

Q. Any lines that are on that map were based upon the best information obtainable when the map was made, was it not?

A. Probably so. On the other hand, I can see how the man who made that map would be primarily interested in geological boundaries. I know of many cases where in cases of that sort, Reconnaissance map, mistakes would creep in of things they wouldn't be putting their attention to. I presume they thought they were getting it about right.

Q. When you say mistakes may creep in do you mean to sit here and say that because certain lines there do not agree with your idea now that that is probably a mistake?

A. I don't mean that, but I wouldn't want to swear in court here that that map is absolutely correct, because I don't know.

Q. Anything that your department gets out now it gets out upon the best information obtainable, does it not?

A. Yes, sir.

Q. Have you any reason to believe that your predecessors would do otherwise?

A. You can judge the character of the map——

Q. Answer the question. Have you any reason to believe that your predecessors would not act upon the best information obtainable?

A. No.

Re-direct examination:

By Attorney-General Owen:

Q. Your point is that it wasn't the purpose of that map to show the boundary line?

A. Yes, sir.

627 Q. But that it was issued for other purposes?

A. Yes, sir.

Q. And that the boundary line as indicated on that map was not carefully considered, or its exact location?

A. Yes.

Q. Do you observe that little neck of land right around here (indicating)?

A. Around Spirit Lake?

Q. Around Spirit Lake.

A. Yes, sir.

Q. Now, according to the coloring of that map where does that land belong, State of Wisconsin or State of Minnesota?

A. According to the coloring of the map it belongs to the State of Wisconsin.

Q. The State of Wisconsin never claimed that land, did it?

A. Not that I know of.

Re-re-cross-examination.

By Mr. Hanitch:

Q. Looking at this again and noting the line that your department has marked as state line?

A. Yes, sir.

Q. Does that line not show that the strip of land just referred to by the Attorney-General of Wisconsin is in Minnesota?

A. The line shows that but the color indicates it is Wisconsin, showing you that errors do creep into maps of this sort.

Q. That's a mistake of the printer, that isn't the mistake of the man who prepared the map?

A. That is a mistake of the man who proof-read the map, that he should have caught, and shows you that mistakes do occur in maps of this sort.

Q. If you were looking on this map to discover what was in the State of Minesota and what was in the State of Wisconsin and you saw a line marked state line, would you say without a ques-

628 tion that that strip of land was intended to be in Wisconsin?

A. I should probably, at first glance, follow the color scheme. If I examined it closer I would——

Q. If you saw the other line would you then say that the land was in Wisconsin?

A. I should think it was probably a mistake.

Q. Wouldn't you say that the line showed that it is in Minnesota?

A. Yes.

Q. Absolutely. There isn't any doubt about that, is there?

A. (No answer).

By Mr. Bailey:

Q. This yellow coloring here simply indicates geological formation?

A. Geological formation.

Q. Does it indicate state lines at all?

A. No.

Q. You have got green down here to indicate a different geological formation and red to indicate an entirely different one?

A. Yes, sir.

Q. That doesn't have anything to do at all with state lines?

A. Apparently not.

By Mr. Fryberger:

Q. Not only that, instead of its appearing that it is a mistake in a map, as you stated, this coloring, it appears just exactly the reverse, that that coloring was done purposely to show where the survey was made; isn't that true?

A. It was intended to show the general distribution of that one kind of formation.

Q. Take this in yellow, marked T-48. That is concededly over in Minnesota, isn't it?

A. Yes, sir.

629 Q. There is the state line, the boundary (indicating?)

A. Yes.

Q. You see it is marked yellow, don't you?

A. Yes, sir.

Q. Do you think that the man who printed that map intended to

show that that little strip marked T-18 concededly over the boundary line, was a part of Wisconsin?

A. Probably not.

Q. Just the same with reference to this little piece of land around Spirit Lake; isn't that true?

A. I presume so.

Q. Why did you say that that was a mistake?

A. I was misled by failing to see the boundary.

630 WILLIAM D. PENCE was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Attorney-General Owen:

Q. Mr. Pence, what is your vocation or occupation?

A. Civil engineer.

Q. And where are you engaged at the present time?

A. I am engaged with the Interstate Commerce Commission as a member of the Engineering Board in connection with the valuation of steam railway properties and other carriers' properties.

Q. Throughout the United States?

A. Throughout the United States.

Q. How long have you been with the Interstate Commerce Commission?

A. Since 1913.

Q. Where were you prior to that time?

A. From July 1906 to May 1913 I was engineer for the Wisconsin Railroad Commission and the Wisconsin Tax Commission.

Q. What was the nature of your duties while you were with those commissions?

A. With respect to the tax commission my duties pertained to the preparation of inventories and the making of reports on the cost of reproduction of the railroad properties of the State to be considered by that commission in connection with matters of taxation. With respect to the Railroad Commission the engineering duties included in addition to valuation matters all of the utilities, including
631 the public utilities, municipal utilities; also included the matter of safety of operation of railways, steam railways and others, including signaling matters.

Q. Now, the Railroad Commission valued the railroads for the purpose of fixing freight rates?

A. The Railroad and Tax Commissions together.

Q. And the Tax Commission was required to place valuation on them for taxation purposes?

A. Yes.

Q. Were you the chief engineer in charge of this work?

A. Yes, I had the duties of chief engineer, and was called engineer of these two commissions.

Q. You were simply called the engineer?

A. Yes.

Q. Now, in pursuance of that work were you called upon to decide any time where the boundary line was between Minnesota and Wisconsin and the waters of the Bay of Superior or the Bay of St. Louis?

A. I was obliged to consider where that line was located in determining the limits of property that we had inventoried as Wisconsin property.

Q. How did that question first arise and when?

A. It first arose in so far as I personally was concerned, I am not at this moment speaking of the work of my predecessor, so far as I am personally concerned, it first arose in connection with the inventorying property of the electric properties of the state under the ad valorem act, and in going over the electric properties of the state late in 1906 I visited Duluth and Superior and then saw that in the initial inventorying of the electric railway in connection with these two cities it would be necessary to determine the point of division of this property as it passed over this state line that you have
632 asked about.

Q. Over what bridge did that property pass?

A. Over the Interstate bridge, so-called.

Q. And between what points?

A. Between Connors Point on the Wisconsin side and Rice's point on the Minnesota side.

Q. Now did you consider where your jurisdiction left off on that bridge?

A. Not at that time. I put it over until such time as I could go into the matter tentatively, and as soon as possible made a tentative determination of it so that the work might be accomplished satisfactorily, and by the time the inventory work was concluded, about a year subsequent to that time, a decision had been made as to the point of division. In this investigation we found that the bridge I speak of, the Interstate bridge, had been taxed, I think half and half, as between Duluth and Superior, indicating that perhaps the part of the bridge that had been taken as the physical division point for the property, and that was in a rough way in accord with the evidence which later on we gathered touching the same point.

Q. Your subsequent investigation satisfied you that that was about the right point of division of that bridge?

A. It is approximately the state line point. Possibly the state line taken in a searching sense might be a little bit closer the Wisconsin side than to the Minnesota side of that particular structure, I mean.

Q. That is the bridge between Rice's and Connors Point?
633 A. Yes.

Q. Known as the Interstate bridge?

A. Yes.

Q. And over that bridge the Street Railway Company's tracks are built and also the tracks of the Great Northern Railway, are they not?

A. It's the Soo line. Two carriers pass over that bridge; one is

the Street Railway that I have already mentioned; the other is the Soo Railway; and we thought the division would presumably apply to the trackage. As a matter of fact, the trackage, so far as the steam road is concerned, belongs to the bridge, and possibly the same is true with regard to the electric line.

Q. Now did that give rise to the same question on the Northern Pacific bridge?

A. That question had been met on the Northern Pacific bridge in the original inventory of steam railway properties under W. D. Taylor. Mr. Taylor was not engineer for the Railroad Commission. The Railroad Commission was organized about the time that he resigned. Then in February, 1906, as I already stated, my duties pertained to both commissions. Mr. Taylor, in his original inventory work in the summer of 1903, under the 1903 ad valorem tax law, arranged with the railroads to have the various lines taken up, each road by its own officers, for the purpose of subdividing the property under what would be called appraisal districts or valuation sections, and in doing that it was necessary to accept some point as the division point at the state line, and so far as the Northern Pacific Road was concerned this part of the bridge nearest the Connors Point and so-called St. Louis Bay bridge, and on that basis a division was made by
634 the railroad. The first appraisal was accepted by the state engineer and which subsequently on review was modified.

Q. Well now, what did you do with reference to determining where the state line intersected the Northern Pacific bridge?

A. The matter came to my attention on the Northern Pacific bridge——

Mr. Fryberger: We will object to this as incompetent, irrelevant and immaterial. His determination wouldn't be at all binding on anybody.

The Commissioner: It will be taken subject to the objection. Go ahead and answer the question.

A. The matter came to my attention as a direct point in connection with the reconstruction of the St. Louis Bay bridge, so-called, on the Northern Pacific line, which I believe was in 1908 and 1909. It came up primarily in connection with the protection of the draw spans on that bridge. The matter of jurisdiction as to the application of safety appliances, the interlocking of the draw bridges and protection against trains going into the draw came as a direct issue. The bridge was completed and a tentative permit was given, a preliminary permit to operate the interlocking plant, being, as I recall, early in May, 1909. This permit was tentative for the reason that the State of Wisconsin at that time did not have a specialist in signaling matters but was on the point of securing one; and one of the first pieces of work this signal engineer did was to complete the inspection of the interlocking plant on that bridge so that a final per-
635 mit could be given out. Before that final permit was given a preliminary report was made to the Wisconsin Railroad Commission and to the Wisconsin Tax Commission in regard

to the uncertainties of this state line and the embarrassments arising from that as regards inventory matters and safety matters. Instructions were finally given to give a permit which the railroad insisted upon having, subject to later correction in the light of investigation which the legislature had then undertaken looking to the final settlement of this matter, and it is my understanding, has been my understanding until today, that this present hearing had some relationship to the particular thing that was then under discussion. I refer now to the appointment of a commission by the Minnesota legislature and the Wisconsin legislature which investigated both the Lake Pepin matter and this matter here.

Q. Well, then, your attention was called to the conflict of jurisdiction between the State of Wisconsin and the State of Minnesota?

A. Yes.

Q. In what year?

A. So far as I personally was concerned, beginning in 1906 and '7 and extending on through in an active way up to the time I left the service of the Railroad Commission, but making a special point of the safety appliance matter in 1909.

Q. Now it became rather acute in 1909 when they opened up the new bridge for traffic trains?

A. Yes, it did.

Q. And that arose from the fact that the Railroad Commission of the State of Wisconsin claimed authority to prescribe safety devices for the Minnesota draw?

A. None precisely that. It arose from the feeling on the
636 part of the representatives of the State of Wisconsin that the investigations that were about to be made must be sufficiently searching and complete, that there could be no "twilight zone" so to speak, no uncertainty as to responsibility. Both at the south end and the north end of that bridge it was necessary to make one inspection for the entire structure, which involved the big danger in the event that the inspection should be of a perfunctory character, and it was to avoid the dangers arising from that condition that the Wisconsin Commission felt that it should insist upon going far enough to be sure that the inspections were as complete as the standard that the Wisconsin Commission demanded.

Q. Well, what was the purpose of these inspections?

A. Purpose of inspection was to protect the draw-bridge, protect trains going into the draw-bridge, through defective signal, defective operation of the draw.

Q. Was that before trains commenced to operate across there?

A. Trains for the time being, as I understand, were detoured around the Grassy Point bridge; I am not sure.

Q. What is this permit you spoke of?

A. It is the permission to operate the plant, and it implies an inspection.

Q. Well, under the Wisconsin law they can't operate trains on a new railroad until they get permission?

A. They will be obliged to stop trains and signal trains to cross a draw-bridge if they did not have that permission. In order to facili-

tate transactions, of course, they desire the permits after the
637 signaling was installed.

Q. There are two draws in that bridge, are there not?

A. There are two draws.

Q. And there has never been any question but what the draw on the Wisconsin side is subject to the jurisdiction of the authorities of Wisconsin?

A. Not that I ever heard of.

Q. The conflict arose as to the respective authority of the two states over what is known as the Minnesota draw?

A. In so far as there was a conflict, yes.

Q. Which is on the Minnesota side of the river, of the bay?

A. It is adjacent to Rice's Point, yes, I understand.

Q. Yes, close to the Minnesota side of the bay, is it not?

A. It is, yes.

Q. Now in arriving at the territorial limits of your jurisdiction there, did you have any correspondence with the Railroad and Warehouse Commission of the State of Minnesota?

A. I had conference, both personally, and through my representative the signal engineer, with the engineer of the Minnesota Railroad and Warehouse Commission, and some correspondence.

Q. And personal interviews, meetings?

A. Yes, and inspection of the situation on the ground.

Q. Were you and he able to agree as to where the territorial boundary was between the two states on the bridge?

Attorney-General Smith: I object to that as incompetent, irrelevant and immaterial.

The Commissioner: You may answer.

638 A. We didn't take that subject up except in a casual way. As I recall, it was mentioned and discussed to some extent. I am sure that speaking for the Wisconsin side of the matter I felt that I had no authority whatever to go into any such agreement as that.

Q. No, but you did talk over with him where your jurisdiction ended and his began?

A. Yes, and we agreed that the inspection should be complete as regards the interlocking plant.

Attorney-General Smith: Move to strike that out as irrelevant, and immaterial.

Q. That's all right. You agreed on the interlocking plant but you didn't agree where the State of Wisconsin ended and the State of Michigan began?

A. I did not, but I would like to make it plain that I am not urging that the standards of the State of Wisconsin were any better than the standards of the Minnesota Warehouse and Safety Commission.

Q. What we desire to show here is that the properly constituted

authority of the State of Wisconsin claimed the boundary line over on the Minnesota pier?

A. Yes, sir.

Q. While Minnesota claimed it to be in the center of the bridge, didn't they?

A. That's it.

Q. And did you receive a letter from Mr. Jurgeson, engineer of the Railroad and Warehouse Commission of Minnesota, in which he stated that they considered the boundary line to be in the center of that bridge?

A. A letter was received by my assistant but Mr. Jurgeson, in so far as the subject was discussed that day on the ground,
639 took the same position, and in fact we made an inspection of the bridge and found there a center mark, state line, on the bridge.

The Commissioner:

Q. Who put that there, do you know?

A. On account of its being a marker and apparently of a definite character somewhat like a monument, I undertook to ascertain and inquired about some and found,—my recollection is Mr. Jurgeson was at hand when this incident occurred,—found a tack on the bridge, a marker of some kind, a survey point, and I inquired of some railroad employees who were at hand as to what that point meant, and these men told me, as I recall their statements, that that was the state line point as established by the United States Engineer, and that the center had been set opposite that tack. I went to the office of the United States Engineer and made inquiry on that point. I was informed at once that a gentleman to whom I was referred on that matter and who was evidently familiar with the thing I was inquiring about, that they hadn't the slightest interest in the position of the state line; that the point referred to was undoubtedly a reference point, a survey point with respect to soundings or something of the kind, and that it was a misunderstanding on the part of the railroad people if they thought they had marked it as the state line. I then called on the Chief Engineer,—I think I first wrote the Chief Engineer relating to this question and subsequently called on him.

Q. You mean the Chief Engineer of the Northern Pacific?

640 A. Chief Engineer, Mr. W. L. Darling, of the Northern Pacific, with a view of determining the status of that sign. I was present during the time that Mr. Darling—I think it took an hour or more to do this—Mr. Darling investigated the status of a mark on a blue-print, evidently a pencil marking, an informal line, and he called in one person after another until finally he called his principal assistant engineer in and it was determined there, evidently to the satisfaction of Mr. Darling, that these informal markings on the blue-print had no status, had no data backing it, at least; and he erased the marking on the map while I was there, and stated that so far as their railroad was concerned the field was clear. As I re-

call it now he ordered the sign taken down. I don't recall that I afterwards made an inspection to see that the sign was removed but that is what became of my investigation.

Mr. Fryberger:

Q. Did you state where that point was on the bridge?
A. I recall it as roughly at the middle of the sheet of water.

Mr. Hanitch:

Q. Between the two approaches?
A. I am sure I can't answer that question with the precision that you wish. Offhand, I would say it was about halfway across the trestle.

Mr. Bailey:

Q. Did it appear to be an old sign?
A. As I recall it it was a new painted sign, but it might have been a renewal of an old one. I think it was on a new
641 bridge and naturally they had put on new decks. I would like to add that I think the sign had been up there for a good while, from what I learned from Mr. Darling. Mr. Darling tried to find out the history of that point and sent to me correspondence with old-time employees and did what he could to assist me in getting data on the matter, and finally urged that it should be settled, not by the railroads but between the engineers of the two states, or the two states themselves, on which position I think he is correct.

Mr. Bailey:

Q. And his correspondence showed what?
A. It was inconclusive. One man seems to think one thing and one another, and neither was able to give the facts that I was seeking.
Q. But it had evidently been there for a long time?
A. So far as I could gain from his statement, it had been there a good while.

Mr. Hanitch:

Q. Did you state where your predecessor had fixed the point where Mr. Taylor——
A. My predecessor, Mr. Taylor, accepted the railroads' determination of it.
Q. That is, accepted this same point?
A. I suppose it was this same point, but within a year I found that he challenged it in a revision of inventory. That is to say, he reviewed his first year's work and made a correction which shows that he challenged it. I think he may not have gone as far as I did in my challenge.

(Direct examination continued by Attorney-General Owen:

Q. The State of Wisconsin didn't give a final definite per-
642 mit to operate that bridge until the safety device prescribed by the Railroad Commission had been installed on the Minnesota draw?

A. It did not.

Q. And your position and the position of the Commission was that the jurisdiction of the State of Wisconsin extended to the bridge pivot of the Minnesota draw?

A. I haven't stated that before, but that point was reached in the initial contact of this problem at the Interstate bridge. I found evidence which convinced me that the Thalweg, the evidence of the thread of a stream traced definitely, carried you past, across the pivot part of the old Minnesota draw, which I believe is the northerly, that is to say the Minnesota end of the new draw, that is to say, if I am correct in my first statement, the present draw is completely in Wisconsin; the present Minnesota draw I am speaking of.

Q. What investigations did you make for the purpose of satisfying yourself as to where that boundary line was?

A. Having gone into the question of securing the Government maps and having seen reference to the state boundary line in the Nicollet map, I felt that it was important enough to know the full status of the Nicollet map to warrant a special investigation at Washington, and since I had in a way been challenged by the Wisconsin Commission, to be sure of my ground I requested permission to make this investigation at Washington and did so. As I examined that Nicollet map in the published document, it seemed to me that the reproduction of the lithograph was defective in the matter that is at stake in this present hearing, that is to say, as to what con-
643 stitutes the river and what constitutes lake, and I wanted to find if I could whether Nicollet made his map by hearsay or by observation; in order to do that I traced up the history of Nicollet himself, and through the co-operation of chief engineers of the United States Army I was, after some difficulty in securing the permission, was able to get the permission, and after delay of a day or so, I think, the documents were dug out and the old chest was found under the eaves of the War Department building there at Washington. I was privileged, under close observation of the chief clerk of the chief of engineers, to examine the original personal notes of Nicollet. These documents I referred to are documents of very special historic interest quite beyond the limits of this rather narrow question we are speaking of here. I do not read French fluently enough to be able to make a translation of this, but I read it for sense and found that Nicollet actually was here. Furthermore, I traced his maps, which were evidently made under his personal direction. The original tracings are there in Washington at the present time, dated in 1841 or '42, possibly a little earlier, and I found that Nicollet in this particular trip when he visited the head of the lakes came up the St. Croix and through the head of Lake St. Croix across the head waters of the stream, crossed the divide to the Brule and down the

Brule to Lake Superior, thence east to the Apostle Islands, where I found he made barometric observations; goes over to the Apostle Islands, makes his astronomical and barometric observations, and then crosses through here up the St. Louis River and describes
644 particularly the crossing of the divide, where he mentions the particularly unfavorable experience with mosquitoes as he goes through and so on across into the Mississippi drainage; his notes were annoyingly scant at the time he was visiting the place I was most interested in, but when we got through we felt sure from the examination of the notes that he had made a careful investigation of the features at the head of the lakes. The reproduction of the map was not so good as his originals I find there, but I think he had in mind the situation as it is. Of course, that is an inference, but that is a conclusion I drew from my investigation.

Q. His notes were written in French?

A. They are.

Q. What year was he through here?

A. I regret that I can't give that. I can't find my notes.

Q. His notes didn't disclose?

A. His notes do disclose, but I didn't make a note of it specially.

Q. From your observation you concluded that what is known as the Thaw Lake of the St. Louis River as it runs through St. Louis Bay and the Bay of Superior was the boundary line between the two states?

A. That is my conclusion, yes.

Q. Now, you said that this controversy was more acute in 1909 and down than at other times?

A. Yes.

Q. Do you know of the pendency of a suit in the United States Supreme Court commenced about that time to have determined the boundary line through Lake Pepin, being between the State of Minnesota and State of Wisconsin?

A. I know there was such suit, and when I learned of that
645 I suggested to the chairman of the Wisconsin Railroad Commission and the chairman of the Wisconsin Tax Commission that it would be advisable to have the other state boundary, namely the one here between Duluth and Superior, taken up by the same representatives that I thought were going to engage for Wisconsin, and that subsequently took definite form.

Q. Your suggestion was that if the boundary line was to be settled in Lake Pepin that it also should be settled at the same time up here in the waters of St. Louis Bay and Bay of Superior?

A. Yes.

Q. Now, what resulted in the way of the appointment of a committee to confer with a committee from Minnesota, if you know?

A. A committee of the legislature was appointed, of Wisconsin, I mean, and I think a corresponding committee of the Minnesota legislature was appointed, and the request was made by the Attorney-General, yourself, of Wisconsin, and requisition was made for the services of the engineer of the Railroad and Tax Commission, by the Attorney-General of Wisconsin, and I was directed to report

to you for services in connection with the inspection trip which was made through Lake Pepin and also here at the head of the lakes up St. Louis River.

Q. And committees of Wisconsin and Minnesota did meet and confer upon these disputed boundary lines?

A. They did.

Q. In Lake Pepin and also in these waters?

A. Yes.

Q. Do you know when that was?

A. I am not sure of this, but I think it was 1911.

646 Q. And the inspection of these waters was at your suggestion?

A. Well, I assume that it was.

Q. That is, you originated the suggestion?

A. I assume that it arose from my suggestion to the chairmen of the two commissions, and so far as I know that was the fact.

Attorney-General Owen: Now this seems to be an appropriate time to offer in evidence a joint resolution of the two houses, the legislature of the State of Wisconsin providing for the appointment of a committee to confer with the similar committee to be appointed by the legislature of the State of Minnesota upon this boundary line controversy.

Mr. Fryberger: Those matters are all admitted in the pleadings, aren't they?

Attorney-General Owen: About our failing to agree?

Mr. Fryberger: I think so. I think the whole thing is set up in the answer about our failing to agree. I am sure they are.

647 M. LAMPERT was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Attorney-General Owen:

Q. Your name is what?

A. M. Lampert.

Q. Do you hold any official position in the State of Wisconsin?

A. I do.

Q. What is it?

A. Assistant Chief Clerk of the Land Department of the State of Wisconsin.

Q. Have you with you any of the original records on file in the office of the Commissioner of Public Lands of the State of Wisconsin?

A. I have.

Q. I will ask you whether you have a map of the original survey of an island in the St. Louis River that is a part of section 19, township 49 north of range 14 west?

A. I have.

Q. Does this page in the book you have before you—is it the plat or map to which you refer?

A. That is the map and plat.

Q. There are some figures on the left-hand margin there; what are they?

A. Those are meanders of township 49, range 13 west.

Q. I show you Wisconsin's Exhibit number 5 and I ask you if that is a true photographic copy of that survey and plat.

A. It is.

Attorney-General Owen: I offer exhibit number 5 in evidence.

The Commissioner: Received.

Attorney-General Owen: I offer in evidence Wisconsin's
648 Exhibit number 6, which is a certified copy of the field notes of the survey of the land of which exhibit number 5 is a plat. Certified by the Chief Clerk of the State Land Office of the State of Wisconsin.

The Commissioner: Received.

Q. Have you the original plat of township 49 north of range 14 west?

A. Yes, sir.

Q. And that appears on this page of this book?

A. Yes, sir.

Q. Now I show you Wisconsin's Exhibit 7 and I will ask you if the page marked "A" of that exhibit is the correct photographic copy of the map appearing on that page?

A. It is.

Q. Now at the right-hand margin of the map on that page are a lot of figures; what do they purport to be?

A. Meanders.

Q. Of what?

A. Of this Bay of St. Louis.

Q. Shown on the map?

A. As shown on the map.

Q. On the same page?

A. Yes.

Q. Now I will ask you if page B of Exhibit 7 is a correct photographic copy of those figures?

A. It is.

Q. And pages A and B taken together, of Exhibit 7, is a complete photographic copy of that page of your plat-book in your office?

A. It is.

Attorney-General Owen: Offer Exhibit number 7 in evidence.

The Commissioner: Received.

Q. Now have you the original plat and survey of 49-15?

A. I have.

Q. I show you Wisconsin's Exhibit 8 and ask you if page
649 A of that exhibit is a correct photographic copy of the plat?

A. It is.

Q. Of so much of township 49 north of range 15 west as indicated by your original record?

A. Yes, sir.

Q. The upper right-hand corner of this page has some figures. What are those?

A. Those are meanders of St. Louis River.

Q. As they relate to that plat?

A. As they relate to that plat.

Q. Now is page 2 of Exhibit number 8 a correct photographic copy of these figures?

A. It is.

Attorney-General Owen: I offer Exhibit number 8 in evidence.

The Commissioner: Received.

Mr. Fryberger: I would like to have the record show that they are duplicates of those already put *in*.

The Commissioner: I guess the meanders were not put in.

Q. Now, Mr. Lampert, these two plats show Big Island in the St. Louis River, do they not?

A. 49-14 and 49-15.

Q. Part of Big Island is in 49-14 and a part in 49-15?

A. Yes, sir.

Q. Now, has the State of Wisconsin been patented or granted any land on Big Island?

A. It has.

Q. How many lots or how many tracts of land?

A. Well, I couldn't say offhand there, but I have made a list of it.

Q. I show you Exhibit number 9 and ask you what that is?

A. That is a patent from the United States to the State of Wisconsin.

Q. Have you got the original of that patent here?

650 A. Of this one I don't know whether I have or not.

Q. Exhibit number 9 which I now show you is a photographic copy of the original patent on file in your office, from the United States Government to the State of Wisconsin, conveying to the State of Wisconsin lot numbered 2 in section 24, township 49 north of range 15 west, is it not?

A. It is.

Attorney-General Owen: Exhibit number 9 is offered in evidence.

The Commissioner: Received.

Q. Have you with you the original patent by which the United States Government conveys to the State of Wisconsin lot number 3, section 25, in township 49 north of range 15 west?

A. I think I have. Lot number 3 in section 25, containing 25 acres and 64 hundredths of an acre.

Q. Now, there are several other descriptions in that patent, are there not?

A. There are.

Q. And it is a large voluminous document?

A. It is.

Q. I show you Exhibit number 10 and ask you if that is a correct copy of so much of that patent as relates to lot number 3, section 49 north of range 15 west?

A. It is.

Q. That is a correct copy of that portion of the patent?

A. Of the patent.

Q. That doesn't copy all of the descriptions of the patent?

A. A great many other descriptions.

Attorney-General Owen: I offer Exhibit number 10 in evidence.

The Commissioner: Received.

Attorney-General Owen: I now offer in evidence Exhibit
651 number 11, which is a certified copy of the original record of swamp lands, patent number 38529, issued by the State of Wisconsin to Anna M. Heugier, conveying lot numbered 2 in section numbered 24, township numbered 49 north of range 15 west.

The Commissioner: Received.

Attorney-General Owen: I now offer in evidence Exhibit number 12, which is a certified copy of the original record of swamp land, patent number 23245, by which the State of Wisconsin conveys to S. H. Clough lot number 3, section number 25, in township 49 north of range 15 west.

The Commissioner: Received.

Q. I now hand you a bound volume and ask you what that is?

A. That is the original field notes of townships 42 to 49 inclusive, range 13 west.

Q. They are part of the original records of the office of the Commissioner of Public Lands of the State of Wisconsin?

A. Yes, sir.

Q. And in your official custody?

A. Yes, sir.

Q. I will ask you to read into the record the field notes relating to section 28 of that township?

A. "North 53½ W., 14, in section 28. North 56 degrees W., 18.50, variation 11 degrees 20 minutes east, N. 50 degrees W., 25.50; N. 56 W., 22.50, N. 74 W., 7, S. 87 W., 6.90, S. 45 degrees W., 1.70, to meander post at mouth of St. Louis River, sand beach. May 28, 1853." This, of course, I might have read one chain and 70 links; that is what it means. "Meanders of bay beginning at mouth of St.
Louis River. For bearings see below, in section 28. S. 5
652 degrees W., 2, S. 59 degrees E., 11.50," I think I had better give you these bearings in there first. "White Pine 6 N. 76 E., 654 links. White Pine 7 S. 77 E., 735 links. S. 41 degrees E., 8.80, S. 82 degrees E., 3.50, S. 45 degrees E., 7.80, S. 36 degrees E., 4, S. 44 degrees E., 4, S. 56 degrees E., 13, S. 67 degrees E., 7.80, N. 88 degrees E., 2.40, S. 26 degrees W., 2, N. 71 degrees E., 2, S. 62 E., 6.60, S. 52 E., 7.60, S. 38 E., 1.60, S. 55 E., 2.40, S. 56 E., 14, N. 62 E., 1.40, S. 16 E., 1.60, S. 60 E., .78, to line of sections 27 and 28 sandy beach, low sandy shore.

Q. Now can you locate that on your plat book of that section?

A. Yes, sir.

Q. And that section is the end of Wisconsin Point, is it not?
A. There is section 28, (indicating).
Q. And that is the end of Wisconsin Point?
A. Yes, sir.
Q. Next to the Superior entry?
A. Yes, sir.
Q. Who was the surveyor that surveyed that?
A. George R. Stuntz.
Q. And you have just read from his original field notes?
A. Yes, sir.
Q. On file as part of the records of the Commissioner of Public Lands of the State of Wisconsin?
A. Yes, sir.
Q. Now, Mr. Lampert, did you compile from the records in your office and bring with you a list of swamp lands?
A. Yes, sir.
Q. In township 48-15, 49-11, and 49-14 that had been conveyed to the State of Wisconsin by the United States Government?
A. Yes, sir.
653 Q. I will ask you to read into the record a list of those lands.
A. The following lands within townships named have been conveyed by patents of the United States to the State of Wisconsin: "Lot 6 section 9 township 48, range 15 west. The date of the patent of the United States to the state was January 25, 1872. Lot 4 in section 11, township 48-15 west, patent from the United States to the state, January 25, 1872, the southeast of the southeast of section 21, town 48, range 15 west. The patent from the United States to the State of Wisconsin is dated January 25, 1872. The northwest quarter of the northwest quarter of section 27, township 48 north of range 15 west was patented to the state on January 25, 1872. The northeast quarter of the southeast quarter of section 35, township 48 north, range 15 west, was patented to the state November 14, 1881. Lot 2, section 30, township 49, range 14 west was patented to the state May 15, 1862. Lot 2, section 24, township 49, range 15 west was patented by the United States to the State of Wisconsin January 10, 1889. Lot 3, section 24, township 49 north, range 15 west was patented to the State of Wisconsin on January 25, 1872. The lands described below were claimed by the state as swamp under act of September 28, 1850. The claim was recognized by the United States but before selections were made the lands were conveyed by the United States to private parties. Therefore other lands in lieu of those were conveyed, and on November 21, 1881, conveyed to the state by patent pursuant to acts of Congress, March 2nd, 1855, and March 3rd, 1857. Lot 3 in section 19, township 49 north of range 15
654 west was patented by the United States to the State of Wisconsin November 21st, 1881. Lot 1, section 19, township 49, range 15 west was patented by the United States to the State of Wisconsin November 21st, 1881. Lot 3, section 19, township 49, range 15 west was patented by United States to the State of Wisconsin November 21st, 1881. Lot 4, section 19, township 49, range 15 west

was patented by the United States to the State of Wisconsin November 21st, 1881. Lot 5, section 19, township 49, range 15 west was patented by the United States to the State of Wisconsin November 21st, 1881. Lot 6, section 19, township 49, range 15 west was patented by the United States to the State of Wisconsin November 21st, 1881. Lot 6, section 19, township 49, range 15 west was patented by the United States to the State of Wisconsin November 21st, 1881. Lot 1, section 19, township 49, range 15 west was patented November 21st, 1881."

Q. Is that all?

A. No, I have an idea there is an error here. That is the trouble. I am sure that these sections should have been as I would read them now. The first one is right, lot 3 section 19.

Q. This is all in section 49-15?

A. Yes.

Q. Now then, read that down there (indicating)?

A. "Lot 3, section 19, lot 1, section 29, lot 3, section 29, lot 4, section 29, lot 6, section 29, lot 1, section 30, lot 1, section 31, lot 9, section 31, lot 10, section 31, lot 1, section 32.

Q. What range is this in?

A. This is in 15 west.

Q. It can't be, I guess you are wrong. What is that that I hand you? (Handing witness a book.)

A. That is the survey of the exterior lines of several town-
655 ships and ranges of the survey made in 1852 by George R. Stuntz.

Q. The book contains the field notes?

A. The field notes, exterior lines, the township lines.

Q. What is that on the back of it?

A. That is a diagram, a sort of a map made by the surveyor, I should judge, of St. Louis River and Lake Superior and Fond du Lac.

Attorney-General Owen: I offer the map appearing on the cover of these field notes to which Mr. Lampert has just referred, in evidence, and I ask the privilege of substituting a copy of this map for the original.

Mr. Fryberger: Photographic copy?

The Commissioner: Can't you make a tracing of that, Mr. Lampert?

The Witness: Yes.

Mr. Fryberger: Your tracing will be more distinct than the original.

The Commissioner: Make a copy of it and send it back.

Mr. Fryberger: We would like to have this understanding, Attorney-General Owen, that if when the copy comes back we want the original to compare it with, we would ask that you have the original returned so that we can compare it.

Attorney-General Owen: Mr. Lampert, you return the copy with that book, to me, and I will take possession of the original book and return it to the office.

Mr. Fryberger: You haven't even marked that, have you, General?

Attorney-General Owen: No.

Q. Are there any identification marks?

A. Number 224.

656 Attorney-General Owen: I will have it marked. (Book marked Wisconsin's Exhibit 13.)

Q. I show you Exhibit number 14 and ask you what that is?

A. That is a plat of two islands or rather lots, map of fractional lot number 9 in section 29, and fractional lot number 1, in section 20, township 49, range 13 west.

Q. Is that part of the original records on file in the office of the Public Land Commissioner of the State of Wisconsin?

A. Yes, sir.

Attorney-General Owen: I offer that in evidence. I want to withdraw that and substitute a photographic copy.

The Commissioner: Map is received with leave to substitute photographic copy.

Q. Now, Mr. Lampert, what is this?

A. That is the original plat of township 49, range 13 west.

Q. Part of the original records on file in your office?

A. Yes, sir.

Attorney-General Owen: I offer that in evidence and ask that leave be given to file a photographic copy of it.

The Commissioner: Received in evidence with leave to substitute a photogrophic copy for the original.

Mr. Bailey: I see on the left-hand side of this page "For plat St. Louis River or Bay of Superior, see large plat-book, page 73." And ask you whether this Exhibit 14 is the copy of what is referred to?

The Witness: That's what it is.

657 By Attorney-General Owen:

Q. That isn't a copy, but that is what is referred to?

A. That is what is referred to; that is the original. (Page referred to marked Wisconsin's Exhibit 15.)

Q. Now, find 48-15; that shows the islands up in the St. Louis River, does it?

A. Yes, sir.

Q. I refer you to Exhibit 16 and ask you what that is?

A. Official plat of township 48 north of range 15 west.

Q. The original records on file in your office?

A. Yes, sir.

Attorney-General Owen: I offer that in evidence.

The Commissioner: Wisconsin's Exhibit 16 received in evidence with leave to substitute photographic copy of the page for the original.

Cross-examination.

By Mr. Bailey:

Q. The George R. Stuntz who made this survey and plat marked Exhibit 5, of this little island, is the same George R. Stuntz who made the survey and plat marked Exhibit 7?

A. Yes, as we understand it.

Q. And he made the survey of the township in 1854 and the survey of the island in 1893, didn't he?

A. Yes, one of them he made in 1893, 49-14 west.

Q. The same George R. Stuntz made both surveys?

A. Yes.

Q. 1852; is that right here?

A. 1852, yes.

Q. And this lot 2 shown about in the middle of Exhibit 5 is the same as lot 2 shown here about the middle of the left of
658 Exhibit 7?

A. Yes, sir.

Q. So that in the earlier days it showed no island at all, and in the latter surveys found this swamp island. Doesn't show any island at all here?

A. No.

Q. And calls these waters here the Bay of St. Louis in the earlier survey and has it marked "River" in the other survey?

A. Yes.

Q. You don't understand, Mr. Lampert, that this Exhibit 5 purports in any sense to be a survey of any channel of the river, do you?

A. No.

Q. And the points from which he took his bearings are all points off of any channel of the river, so that the channel is simply drawn in as a sort of a diagram of it, not with reference to any particular point?

A. I couldn't answer that question.

Q. You are familiar with surveying, I take it?

A. Well, very little.

Q. Doesn't that appear to be true from the knowledge that you have?

A. It appears to be that way, yes; that is the way I understood it.

659 Received August 11, 1917. D. E. Roberts, Commissioner.

FEDERAL BUILDING, SUPERIOR, WISCONSIN.
THURSDAY, August 9, 1917.

The taking of testimony was resumed before the Commissioner, Hon. David E. Roberts, at the above time and place.

Present: The Commissioner, Hon. David E. Roberts.

On behalf of the State of Minnesota, Hon. Lyndon A. Smith, Attorney-General of the State of Minnesota; Mr. W. D. Bailey, Mr. H. B. Fryberger, and Mr. Louis Hanitch.

On behalf of the State of Wisconsin, Hon. Walter A. Owen, At-

torney-General of the State of Wisconsin, Mr. Horatio V. Gard, Mr. Lyman T. Powell, and Mr. T. T. Hudson.

The following testimony was introduced and the following proceedings were had, to-wit:

(Papers marked Wisconsin Exhibits 16½, 17, 18, 19, 20, 21, 22, and 23.)

Attorney-General Owen: I offer in evidence Wisconsin Exhibit 16½, being a certified copy of a letter written to Governor Robert M. La Follette of Wisconsin by D. G. Gaillard, Captain of Engineers, U. S. A., at Duluth, Minnesota, under date of April 1, 1905, calling attention to conditions existing in the St. Louis River.

Mr. Fryberger: Where is the blue-print he refers to?

Attorney-General Owen: I do not know.

(There was no objection, and Wisconsin Exhibit 16½ was received in evidence.)

660 Attorney-General Owen: We offer in evidence Wisconsin Exhibit 17, being a letter written by Mr. Gaillard to the Governor of the State of Minnesota, covering the same subject mentioned in Wisconsin Exhibit 16½.

Mr. Fryberger: Of course so far as it is claimed that those men had any authority to fix a boundary line, we would object to it as incompetent, irrelevant and immaterial.

Attorney-General Owen: We do not claim anything like that. We do not claim that any man on earth has the power to fix that line. He just says what he thought about it.

The Commissioner: Wisconsin Exhibit 17 is received in evidence, subject to the objection of the State of Minnesota.

Attorney-General Owen: I now offer in evidence Wisconsin Exhibit 18, being a certified copy of a joint resolution of the Legislature of the State of Wisconsin, providing for the appointment of a committee to confer with a similar committee appointed by the Legislature of the State of Minnesota, upon boundary line controversies between the states.

Mr. Fryberger: This is a joint resolution?

Attorney-General Owen: Yes, providing for the appointment of the committee.

Mr. Fryberger: We have no objection to Exhibit 18.

The Commissioner: Wisconsin Exhibit 18 is received in evidence.

Attorney-General Owen: I now offer in evidence Wisconsin Exhibit 19, being certified copy of the report of the Legislative
661 committee of Wisconsin appointed to consider the boundary line questions with a similar committee from Minnesota.

Mr. Fryberger: No objection to Exhibit 19.

The Commissioner: Wisconsin Exhibit 19 is received in evidence.

Attorney-General Owen: Now, gentlemen, will you stipulate that the committee appointed by the Legislature of the State of Minnesota to confer with the committee appointed by the Legislature of the State of Wisconsin upon matters in controversy concerning the boundary line between the two states in the waters of St. Louis Bay and Superior Bay and Lake Peppin, made a report to the Legis-

lature of the State of Minnesota on the 18th day of February, 1913, identical with Exhibit 19?

Attorney-General Smith: I would like to check it over. I think it is; that is my understanding.

Mr. Fryberger: It is your understanding that they are identical, isn't it, General Owen?

Attorney-General Owen: We got them up together, I think.

Attorney-General Smith: General Owen, the committees' report seems to be identical excepting as to the last paragraph, and that last paragraph is different in the Minnesota report from what it is in yours.

Attorney-General Owen: What is it—an additional paragraph?

Attorney-General Smith: No, it is a substitute.

Attorney-General Owen: Well, cannot you stipulate that they are substantially identical?

662 Attorney-General Smith: I will say they are the same except as to the last paragraph, and which paragraph in the Minnesota report is as follows—and read it right in; it is only half a page.

Attorney-General Owen: All right. Now, General Smith, I understand you are willing to stipulate that the Minnesota committee made a report to the Legislature of the State of Minnesota identical with the report made by the Wisconsin committee, as shown by Wisconsin Exhibit 19, except the last paragraph, which in the Minnesota committee report reads as follows: "Your committee has labored diligently and earnestly to effect an understanding with the committee on the part of Wisconsin as to the disputed boundary lines, which might be made the basis of an agreement between these sister states; there is a large area of land upon which great improvements have been made along the St. Louis, Spirit Lake, St. Louis Bay, and Superior Bay, which lie within what we contend is Minnesota territory, which is claimed by Wisconsin. This property is both extensive and valuable, and your committee could not agree to recommend any arrangement which would place these great properties belonging to our citizens under the sovereignty of another State; and while we regret that an agreement could not be reached as to the disputed boundary line, yet we believe that if uniform and reciprocal laws are enacted by the two states along the lines of
663 the conclusions of the Joint Commission that much practical good will have been accomplished.

Respectfully submitted.

THOMAS KNEELAND,
GEO. A. McKENZIE,
ANDREW ANDERSON,
MANLEY L. FOSSEEN,
GEO. H. SULLIVAN,
Committee."

Attorney-General Smith: Yes.

The Commissioner: The stipulation is entered upon the record and the exhibit is received.

Attorney-General Owen: I now offer in evidence Wisconsin Ex-

hibit 20, being a certified copy of a portion of the charter of the Village of Duluth, as found in Sections one and two of Chapter one of an act of the Legislature of the State of Minnesota, entitled 'An Act to Define Boundaries of and establish Municipal Government for the village of Duluth,' the same being Chapter 11 Special Laws of Minnesota for 1881, approved March 8, 1881, and Acts amendatory thereof.

Mr. Fryberger: We object to it as wholly incompetent, irrelevant and immaterial.

The Commissioner: The exhibit is received subject to the objection.

Attorney-General Owen: I now offer in evidence Wisconsin Exhibit 21, being a certified copy of a portion of the
664 charter of the City of Duluth, the same being Section 1 of an act of the Legislature of the State of Minnesota, entitled, 'An Act to Define the Boundaries of and Establish Municipal Government for the City of Duluth,' the same being Special Laws of Minnesota for 1887, Chapter 2, page 57, approved March 2, 1887, and acts amendatory thereof.

Mr. Fryberger: We have the same objection to Wisconsin Exhibit 21 as to Wisconsin Exhibit 20.

The Commissioner: The exhibit is received in evidence subject to the objection.

Attorney-General Owen: I now offer in evidence Wisconsin Exhibit 22, the same being a certified copy of a portion of the City Charter of the City of Duluth, the same being Section 1 of Chapter 1 of the Duluth City Charter, adopted by the qualified voters of the City of Duluth at an election held in said city February 6, 1900, in pursuance of the provisions of Chapter 351 of the Laws of the State of Minnesota for the year 1899.

Mr. Fryberger: Same objection to Wisconsin Exhibit 22 as to Exhibits 20 and 21.

The Commissioner: The exhibit is received in evidence subject to the objection.

Attorney-General Owen: I now offer in evidence Wisconsin Exhibit 23, being a certified copy of a portion of the charter of
665 the City of Duluth, the same being Section 1 of Chapter 1 of the Charter of the City of Duluth, adopted by the electors of the City of Duluth on December 3, 1912, pursuant to the provisions of Chapter 238 Laws of Minnesota, 1903, and pursuant to Article 4 of Section 36 of the Constitution of the State of Minnesota.

Mr. Fryberger: Same objection as to Exhibit 23 as last above made.

The Commissioner: The exhibit is received in evidence subject to the objection.

Attorney-General Owen: I now offer in evidence section 2 of chapter 2 of the Charter of the City of Superior, which was enacted by the Legislature of the State of Wisconsin as Chapter 152 of the Laws of 1889.

The Commissioner: Will you read that into the record?

Attorney-General Owen: Yes.

Mr. Fryberger: The whole chapter?

Attorney-General Owen: No, just that section.

Mr. Fryberger: Same objection as last above.

The Commissioner: The offer will be received subject to the objection made.

Attorney-General Owen (reading): "Section 2. The following described territory shall constitute and be the City of Superior: Beginning at the southeast corner of Section number 1 in Township 48 north, of Range 13 west, in the County of Douglas and State of Wisconsin; running thence west on the section line to the south-
666 west corner of Section 6, in Township 48 North, of Range 14 West; thence running north along the township line to the intersection of said line with the state line betweeen the states of Wisconsin and Minnesota; thence following said state line down the river St. Louis and through St. Louis Bay and through the bay of Superior to the mouth of the St. Louis River, between Minnesota and Wisconsin Points, and thence eastwardly to the meander line on the northernmost point of said Wisconsin Point; thence along said meander line on Lake Superior and following the shore line of said lake southeasterly and easterly to the section line on the east side of Section 36, in Township 49 North, Range 13 West; thence south to the place of beginning."

Attorney-General Owen: I now offer in evidence section 2 of Chapter 124 of the Laws of the State of Minnesota for the year 1891, entitled 'An Act to Revise, Consolidate and Amend Chapter 152 of the Laws of 1889,' Entitled 'An Act to Incorporate the City of Superior, which Section 2 I will read.

Mr. Fryberger: Same objection.

The Commissioner: Received subject to the objection.

Attorney-General Owen (reading): "Section 2. The following described territory shall constitute and be the City of Superior: Beginning at the southeast corner of Section 1 in Township 48 North,
667 Range 13 West, in the County of Douglas and State of Wisconsin; running thence west on the section line to the southwest corner of Section 6, in Township 48 North, of Range 14 west; thence running north along the township line to the intersection of said line with the State line between the states of Wisconsin and Minnesota; thence following said state line down the river St. Louis and through St. Louis Bay and through the Bay of Superior to the mouth of the St. Louis River, between Minnesota and Wisconsin Points; thence easterly to the meander line on the northernmost point of said Wisconsin point; thence along said meander line on Lake Superior and following the shore line of said lake southeasterly and easterly to the section line on the east side of section 36, in Township 49 North, of Range 13 West; and thence south to the place of beginning."

Attorney-General Owen: I now offer in evidence a portion of page 224 of Senate Documents, First Session, Thirty-third Congress, Volume 1, 1853-4, being part of the report of the Surveyor-General for the states of Iowa and Wisconsin.

Mr. Fryberger: I would suggest that if any part of it goes in, it

should go in from the explanatory paragraph preceding, down to the word "Swamp land" on page 225, to get the whole sentence.

668 Attorney-General Owen: I will read it all if you want me to.

Mr. Fryberger: Aside from that we have no other objection than the one last above made.

The Commissioner: The portion of the document which is offered may be received subject to the objection made.

Attorney-General Owen: I will read all that has been suggested by counsel on the other side.

(Reading): "It may not be out of place at this time to give a brief description of the country through which this boundary line passes, especially as the increased attention it is at present receiving is in a great measure attributable to your last able report, it being very generally referred to in communications received at this office, requesting more particularly information in regard to the character of the district which was then only partly surveyed.

"That portion of the boundary line defined as the St. Louis River from its mouth (which is in Township 49 of Range 13) to the first rapids above the Indian village, being peculiar, I will first describe:

"The mouth of the river is about one-fourth of a mile wide, and is formed by a narrow sand-bar projecting from the north shore of the lake about seven miles. This bar is uniform in course, and varies from ten to forty chains in width. The bar on the east side of the river is like that on the west, but is only one and one-half

669 miles in length. During the past summer the water in the channel over or through the bar was about seven feet deep, but the entrance is crooked and difficult of access during the heavy northeast storms which at certain seasons prevail. Once inside, however, vessels are safe, as the river widens into a bay, about eight miles long and one and a fourth miles wide. The shores are mostly clay banks, with narrow sand-beach for about six miles, when the beach disappears, and small bays or inlets extend from the main body to distances varying from five chains to two miles.

"At the distance of nineteen miles up the river is situated the Indian village of Fond du Lac, on the north side of the river, containing fifty or sixty cabins and lodges, three or four good houses, two trading posts, and a mission building. On the Wisconsin side, opposite this village, several families of French and Indians live in a half-civilized manner. On the same side of this bay, from Pokegamong Bay to the rapids, the country is hilly and covered thickly with timber, the most valuable kinds of which are white cedar, spruce and white pine. The north side is bounded by a range of mountains, that rises from eight hundred to a thousand feet above the level of the lake, and within from one to three miles from the beach. This range extends parallel to the lake shore, as far

670 east as Pigeon River, and bears north fifty-five degrees east.

"From the best information obtainable, I am inclined to believe that this is as good a mineral range as is to be found on Lake Superior. Specimens of native silver and copper have been found

and exhibited, but no mines have been opened up or worked in this locality, that I am aware of.

"From the starting point in the rapids of the river to the sixteenth mile post on the boundary, the country is generally level, clay table-lands, elevated about three hundred feet above the lake, and covered with a valuable growth of white pine, cedar, birch and spruce; and is well supplied with streams, branches of Left-hand River, which are of sufficient size to float logs and furnish water power for the manufacture of lumber. The summit level between the waters that flow into the lake and those that flow into the Mississippi River is crossed by the boundary on the sixteenth mile; and on the south side of this the country changes in formation; the deep red clay disappears, and sand is the prevailing soil. The surface is more irregular, and magnetic disturbances are more frequent and extreme, rendering the use of the plain compass impracticable. From this point to the River St. Croix the boundary passes through a succession of swamps which are filled with rich deposits of peat. The timber, as a general thing, is not of sufficient size to be valuable, except in the
671 vicinity of the St. Croix, where the country is covered with valuable groves of white pine. The monument on the St. Croix River stands two and a half miles above Yellow Pine Creek and about four miles below the mouth of the Namekagon River.

"The survey of the boundary between the State of Iowa and the territory of Minnesota has been completed, and the maps and field notes of the same, with the necessary accounts and vouchers, have been forwarded to your office. As the field work was completed and full details furnished by my predecessor last season, anything further on this subject is unnecessary."

Mr. Fryberger: Who was that? Was that the surveyor-general of the United States?

Attorney-General Owen: Report of the Surveyor-General of Iowa and Wisconsin. I presume that was made to the Surveyor-General of the United States.

Mr. Fryberger: What was his name?

Attorney-General Owen: Warner Lewis.

Mr. Fryberger: 1854?

Attorney-General Lewis: 1853. This is dated at Surveyor-General's office, Dubuque, October 21, 1853, and this seems to be a document accompanying the President's message.

Attorney-General Owen: Now I will introduce in evidence
672 a map to be found in Senate Documents, First Session Thirty-Third Congress, which shows Township 49 North of Range 13 West.

The Commissioner: By whom does the map purport to have been made?

Attorney-General Owen: Public surveys of the State of Wisconsin and territory of Minnesota; it is an official map, made by Warner Lewis, surveyor general.

The Commissioner: And the date? Is there a date on the map?

Attorney-General Owen: It is dated October 21, 1853. I have a

photographic copy of that map here, which I desire to substitute in lieu of the original.

The Commissioner: Let counsel on the other side see the photographic copy. Is there any objection, gentlemen, to the offer in evidence of the map?

Mr. Fryberger: No objection.

The Commissioner: The map is received in evidence.

Attorney-General Owen: I introduce this photographic copy.

Mr. Fryberger: There is no objection to that photographic copy. It is not as clear as it might be, that is all.

The Commissioner: The photographic copy is received in evidence in lieu of the original, and the same is marked Wisconsin Exhibit 24.

Mr. Gard: We now offer in evidence a map known as a Map of the Hydrographical Basin of the Upper Mississippi River, made
673 by I. N. Nicollet, published as Document Number 52 of the House of Representatives January 11, 1845, and also page 128 of the same document number 52.

The Commissioner: Any objection to the map, gentlemen?

Mr. Fryberger: We have no objection.

The Commissioner: There being no objection, the map and the page mentioned may be received in evidence. Do you desire to substitute a photographic copy?

Mr. Gard: We ask to substitute this photographic copy for the original.

(The photographic copy was marked Wisconsin Exhibit 25.)

The Commissioner: The photographic copy, marked by the reporter Wisconsin Exhibit 25, is received in evidence, in lieu of the original. Do you desire to read into the record the page which you offer?

Mr. Gard: I would like to have the reporter copy the page into the record.

Page 128 of the document offered is in the words and figures following, to-wit:

Southwest Region of Lake Superior.

Places of observation.	Altitudes above the Gulf of Mexico.	North latitudes.	West of Greenwich. Longitudes in time.	Longitudes in arc.	Authorities, &c.
	Feet.	° ′ ″	*h.* *m.* *s.*	° ′ ″	
Madeleine island, the trading-house and level of the lake (depth of Lake Superior, according to the British Admiralty survey, 792 feet)	620	46 47 10	6 3 34	90 53 30	Nicollet.
St. Louis river, the trading-house called Fond du Lac, but about 24 miles up the stream from the true Fond du Lac	.....	46 39 50	6 9 1.33	92 15 20	do.
Culmination of the grand portage, on St. Louis river	1,066	.. .. ..	.. .. ..	.. .. ..	do.
Upper end of the grand portage, on St. Louis river	984	.. .. ..	.. .. ..	.. .. ..	do.
Head of the Long Rapids, on St. Louis river	.....	46 49 42	6 9 40	92 25 0	do.
East Savannah river, the mouth	1,264	.. .. ..	.. .. ..	.. .. ..	do.
Dividing-ridge between East and West Savannah rivers	1,334	.. .. ..	.. .. ..	.. .. ..	do.
Portage between Wissakude, or Burnt Wood river, and the head of St. Croix river, emptying into the Mississippi	956	.. .. ..	.. .. ..	.. .. ..	do.
Porcupine hills, (Wisconsin mountain,) 330 yards above the lake	1,610	.. .. ..	.. .. ..	.. .. ..	British Admiralty Survey.
675					
Head of the Kettle rapids, or Akkik rapids, on St. Croix river	.....	45 54 40	.. .. ..	.. .. ..	Nicollet.
Falls of St. Croix river	.....	45 30 10	6 10 40	92 40 0	do.
Kittle-kittigan lake, Lac Vieux Desert, south island	.....	46 7 31	5 57 20.87	89 20 13	Capt. T. J. Cram.
Kawasidjiwong river, (Montreal river,) the mouth	.....	46 33 0.5	6 2 58	90 44 30	do.
the head	.....	46 18 38	6 1 38.53	90 24 38	do.

(A short recess was here taken.)

Mr. Gard: In connection with the offer of page 128 of the House of Representatives' document just offered, I want to offer in evidence also page 128 of Senate's Document Number 237 of the Second Session of the Twenty-sixth Congress, being part of Volume 5, Part 2, of the session of 1840-41, entitled, "Report Intended to Illustrate a Map of the Hydrographical Basin of the Upper Mississippi River, made by I. N. Nicollet, while in employ under the Bureau of the Corps of Topographical Engineers. February 16, 1841."

Mr. Bailey: Is that the same thing?

Mr. Gard: Exactly the same thing; that corresponds to page 128 of the House of Representatives' document just offered.

676 Mr. Bailey: In other words, the report was identical to both Houses?

Mr. Gard: Yes. Published at different times, however.

Mr. Bailey: In that connection we want to offer a paragraph—or will you offer it?

Mr. Gard: Yes, I will offer it at your request, or you can do so, whichever you like. At the request of counsel for Minnesota we also offer in evidence a paragraph from page 108 of Senate Document 237, and will read the same into the record, as follows:

"'There remains still a short portion to the west of Pagadewan river, which neither of us has explored. But a traveller cannot see everything; he has often to yield to circumstances which he cannot influence or control.

"In point of fact, there are, in this northern part of the United States, portions of country more unknown now than they were formerly. For example: the districts watered by the Vermillion Lake river and St. Louis river, were, from time immemorial, the way of communicating with the interior as long as the Indian trade was in the hands of the French or the British. But, since the United States have taken possession of the territory south of Rainy River, the intercourse between the Americans and the British traders has entirely ceased. That small region is still a complete wilderness,

677 very little known, and of difficult exploration. It is now laid down from the best information that the Indians could furnish, or the surveys for settling the north boundary could procure. The same may be said of Otter-Tail Lake and the sources of the Red river of the North, that are in a country formerly occupied by Indian traders, whom the turbulence of the Chippewas has forced away. As it is still a permanent theatre of the wars of these last with the Sioux, the guides to be procured from either of these tribes refuse to conduct one thither, lest they themselves might fall in with enemies."

(Page 108 of Senate Document 237 is in the same words and figures as page 128 of House of Representatives' Document Number 52, set forth in this typewritten record at page ——.)

The Commissioner: Now the pages mentioned are received in evidence, subject to the objection.

Mr. Bailey: I take it the same page and same language appears in the House of Representatives' report too?

Mr. Gard: Yes, I so understand it.

678 HIRAM HAYES being duly sworn as a witness on behalf of the State of Wisconsin, testified as follows:

Direct examination.

By Mr. Gard:

Q. Colonel Hayes, you live in the City of Superior?
A. Yes, sir.
Q. Came to Superior in 1854?
A. Yes, sir.
Q. What part of the city did you settle in at that time?
A. What is now called East End.
Q. And have lived there continuously since, except for a short time that you occupied a homestead over near Oneota?
A. Yes, sir; that was a pre-emption.
Q. And you have been at the head of the lakes continuously since 1854, except when you were absent in the Civil War?
A. Yes, sir.
Q. How long were you absent?
A. About six years.
Q. When did you enter the Civil War?
A. 1862.
Q. As a Union soldier?
A. Appointed as Captain and Assistant Quarter-master.
Q. And when you came out what was your rank?
A. Lieutenant Colonel.
Q. You are now a member of the Library Board of the City of Superior?
A. Yes, sir.
Q. How long have you been a member of the Library Board?
A. About ten years.

679 Q. You have held various other offices in the city of Superior, have you, in the old town of Superior?
A. Yes, sir.
Q. I believe you were formerly judge of St. Louis County, Minnesota, at one time, were you not—County Judge?
A. Yes, sir.
Q. That was when you had your homestead at Oneota?
A. It was when I had my pre-emption.
Q. What year was it that you were appointed County Judge of St. Louis County?
A. 1857 or '8.
Q. You first settled at Superior, you say, in 1854?
A. Yes, sir.
Q. Did you come with the surveyors for the proprietors of Old Superior, now East End?

A. I did.

Q. What was the purpose in coming to Superior at that time?

A. To settle here and grow up with the town.

Q. When was the first white settlement at Superior?

A. It commenced in 1853, and continued from then on.

Q. Is that the first settlement that was made at the head of Lake Superior?

A. It was.

Q. Tell us something about the conditions that surrounded the head of the lakes at that time, with reference to settlement.

A. The townsite of Superior, the site of the present City of Superior, was a dense forest—pine, birch, spruce, tamarack, cedar, and so on; the north shore was a wild and rocky coast, unsettled, uninhabited except by Indians, then Indian territory. There was no communication with civilized live except by lake and what was called the Military road cut in 1854 or '55 or '56, along there, from
680 here to St. Paul, via Taylor's Falls, and then the route to Sandy Lake, the old Indian route.

Q. Where is Sandy Lake?

A. In what county of Minnesota I do not know, but it is west of the reaches of the St. Louis River, the way of communication then to the Mississippi.

Q. Where was the nearest white settlement to the head of the lakes at that time, outside of Superior?

A. Taylor's Falls, Minnesota; Ontonagon and Marquette, in Michigan.

Q. How did you travel to get there, Colonel, to the head of the lake?

A. Walked.

Q. From where?

A. From Taylor's Falls up to St. Croix, and thence on a rough trail cut out to here, cut out in the winter of 1853 or '4.

Q. Did the party of surveyors come with you?

A. Yes, sir.

Q. How many were there in the party?

A. Half a dozen, with packers.

Q. They represented what is known now as the proprietors of Old Superior, did they?

A. They came to lay out a town here, now called Superior, at the instance of the proprietors.

Q. Where did those proprietors live, principally?

A. St. Paul, Washington, and at Superior.

Q. Name some of them, or all of them, if you can.

A. There was W. W. Corcoran——

Q. Who was he, Colonel?

681 A. He was a banker in Washington. James Stinson.

Q. Who was Mr. Stinson?

A. Well, he was a rich man, an owner of lands and property in various places, a real-estate operator. There was George E. Nettleton, an Indian trader; W. A. Richardson, a member of Congress;

R. R. Nelson, son of the Supreme Judge of the United States; afterwards District Judge for Minnesota; D. A. Robertson——

Q. Who was he, Colonel?

A. A resident of St. Paul, and an editor, a literary man. Also D. A. J. Baker.

Q. And who was he?

A. A resident of St. Paul, and a business man.

The Commissioner: Walbridge?

Witness: Yes, Horace S. Walbridge, of Toledo, a banker; Robert J. Walker, secretary of the Treasury under Polk, I think. There may have been some others. And Edmund Rice.

Q. Was Stephen A. Douglas one of them?

A. No, sir. He had an interest, held in other hands. Edmund Rice, brother of Senator Rice. Douglas had an interest, as I understand, but it was held in other hands, in trust.

Q. In trust for him?

A. Yes.

Q. But he was one of the interested parties?

A. Yes.

Q. There were some others that you do not recall now?

A. I think there were one or two.

The Commissioner: Were the Breckenridges of Kentucky here?

Witness: They were interested in property; I am not cer-
682 tain that John C. was; I think he was one of the proprietors; John C. Breckenridge, afterwards vice-president, and a military man in the Civil War. A great many interests were held in trust, the names not appearing.

Q. What is the extent of the holdings of those proprietors at the head of the lakes here, generally speaking?

A. Well, to the extent of four or five thousand acres, in Township 49-13 and 49-14, fronting on the water.

Q. They platted the townsite of Old Superior, now known as the East End?

A. Yes, sir.

Q. In what year?

A. In what is called the Western Division in 1854.

Q. And other divisions later?

A. And other divisions later.

Q. After you settled at Superior you entered a pre-emption claim over at Oneota, on the Duluth side, what is now known as the Duluth side?

A. On the Minnesota side; yes, sir.

Q. Where was your pre-emption claim located?

A. In close touch with Oneota, the site of it, and about a mile and three-quarters or two miles from the base of Rice's Point, now known as part of West Duluth.

Q. How long did you occupy that pre-emption claim?

A. Oh, I think between one and two years.

Q. During that time you were frequently back and forth between that claim and Superior, Old Town?

A. Yes, sir.

Q. How did you travel?
A. By water, in canoes and boats.
Q. By "boat" you mean row-boat?
A. Row-boat.
683 Q. Were there any boats at the head of the lakes navigated by other than man power at the time you came here?
A. Yes, sir.
Q. What was it?
A. The first boat I saw was called the Baltimore; she lay then near the old lighthouse, by the entry, the natural entry.
Q. When was that?
A. 1854.
Q. Now, were there steam boats came to the head of the lakes prior to that time?
A. I don't think there were. The Sault Canal was not open for navigation prior.
Q. Do you know how the Baltimore got into the waters of Lake Superior?
A. I have always understood she was rolled over.
Q. At the Sault?
A. At the Sault.
Q. Portaged over?
A. Portaged over.
Q. About when was the Sault Canal opened so that boats could run between Lake Superior and the lower lake waters?
A. Well, I think for light draft in 1855.
Q. About how many boats do you think were portaged over before that time?
A. I don't know of any.
Q. Except the Baltimore?
A. Yes, sir, except the Baltimore.
Q. Then, the navigation at the head of the lakes prior to that time consisted of what?
A. Well, I don't know from actual knowledge.
Q. There were row-boats and canoes, were there not?
A. Repeat.
Q. There were row-boats and canoes, were there not?
A. Oh, yes.
Q. And the navigation, then, of these waters here prior to
684 that time was by row-boat and canoe, was it not?
A. I think it was. I should say that history indicates navigation of the lake prior to that time—1854—by other than row-boats and canoes, as light draft craft; for instance, what is called the Algonquin, a sail-boat of some tonnage, and doubtless other craft.
Q. About how many other craft?
A. Well, I have no idea.
Q. There were a few, were there not?
A. I understand so from history?
Q. The Algonquin was a sail-boat of very light draft, wasn't it?
A. Yes, sir.
Q. About how much water did she draw?

A. That is, she was a boat moved by sails, and probably of sixty or seventy tons tonnage, 50 or 60 I should say.

Q. What other boats navigated the water here at the head of the lakes in the '50's?

A. The Manhattan, the Lady Elgin, the North Star, City of Superior, Cuyahoga, Illinois, Planet, City of Cleveland, and others.

Q. Was there a Sunbeam?

A. The Sunbeam came here while I was away, during my absence, the six years or about. She was lost.

Q. Then it was not here in the '50's?

A. I never saw it to remember; it doubtless was.

Q. Now, those boats that you have named were all the boats that you knew of navigating the waters here at the head of lakes in the '50's?

A. Yes, sir; those and others.

685 Q. There were some others?

A. I think so.

Q. About how many others would you say ?

A. Well, three or four, or more.

Q. What did the traffic consist of at that time, Colonel Hayes? The water traffic, I mean.

A. Bringing supplies for the settlement, for explorers and people who were attracted here by the new town. They brought cattle, sent over to Minnesota by the Military road; they exported cattle more or less, brought from that direction, not much but some; Indian goods; railroad supplies.

Q. In the '50's?

A. Yes, sir.

Q. Where did the railroad supplies go from here?

A. The Lady Elgin, I think in 1856, in November, brought a load of such supplies, meaning subsistence, implements, et cetera, for the purpose of commencing the construction of a railroad from here (meaning west end of Lake Superior) in the direction of Iowa, to some point on the Iowa line, between Minnesota and Iowa; moved by a land grant enacted in, I think, May, 1854, but afterwards repealed. It was in expectation of constructing that road that the supplies came.

Q. Was the road constructed?

A. No, sir.

Q. When was the first railroad constructed at the head of the lakes?

A. The first operated road by the fall of 1881, in December, I think, over which came the first train of cars to Superior, from the Northern Pacific Junction then called, now Carlton.

686 Q. Is that the first railroad at the head of the lakes?

A. No, sir.

Q. Which was the first?

A. The Lake Superior & Mississippi, afterwards St. Paul & Duluth, now a part of the Northern Pacific.

Q. When was that constructed to the head of the lakes?

A. About 1869 or '70.

Q. Now, those boats that navigated the waters here at the head of the lakes in the '50's, state whether or not they generally went up the waters of the St. Louis River here, including the bays?

A. No farther than to reach what was then and is now called Quebec pier on the Superior front, about a mile in a straight line from the lighthouse at the entrance.

Q. By that you mean the old lighthouse at the Superior entry?

A. Yes; incapable of coming directly across, but taking a course by the deep water up the bay or river to a point above Quebec pier, that is, to the west of it, up-stream; then taking a circuit southwesterly, I think, and came in Quebec pier by this detour.

Q. When the boats came through the natural entry, you say they went up the channel there. Where was the channel that they traversed?

A. As indicated, I think, by the chart of Captain Meade, surveyed or prepared in 1861, and later published, and now known as Meade's chart.

Q. They went up the channel, you say, as indicated on that map?

A. I think so, up to the deep water.

687 Q. Up along the Minnesota Point shore?

A. Yes, sir.

Q. To a point that would be northwesterly or above the Quebec pier?

A. Yes, sir.

Q. Then they came in a circuitous route back to Quebec pier?

A. Yes, sir. This point of turning I would say would be about a mile and a half from the extreme end of Minnesota Point, or thereabouts.

Q. Southerly from Minnesota Point?

A. Northwesterly, up the point.

Q. Oh, yes. Could the boats come straight in to Quebec pier at that time?

A. No, sir.

Q. Why?

A. Shallowness of the water.

Q. Did those boats generally go up the waters of the St. Louis River in the '50's?

A. As I have indicated.

Q. Just to Quebec pier?

A. Just to reach Quebec pier.

Q. No farther up the river?

A. No, sir. I ought to except perhaps instances of which I have no recollections; they may have gone up.

Q. They may have gone up in some instances?

A. A little farther.

Q. Yes, but generally they went up no farther than you have indicated?

A. Yes, sir.

Q. Were they deep draught boats, or not?

A. Well, they drew from eight to twelve feet when loaded, perhaps fourteen.

Q. After you settled here, did you become familiar with the waters of St. Louis River, including St. Louis Bay and Superior Bay?

688 A. In a general way.

Q. Do you know how the people regarded that water, as to whether it was a river, or an arm of the lake, at that time? How did they regard it?

A. As a river, the entrance, or the mouth being at the entrance between the two points, Minnesota and Wisconsin.

Q. Describe that entrance at that time, Colonel Hayes.

A. It was about a thousand to twelve hundred feet wide, naturally, from point to point. It contained from 8 to 12 feet of water, between the two. When they turned around Minnesota Point and entered the bay or river, there was very great depth then and now, 25 or 30 feet. They approached this entrance from the lake, deep navigation, to a point northwesterly of the entrance in the lake; then turned and came towards the entrance in deep water. In the entrance was the depth I have named, in its direct lake approach, or approach from the lake, and passing through the entrance boats encountered difficulty from change in the water, in the depth of the water, due to protracted northeast storms, which blew in those days three days at a time, and some six, with great force, and moved the sand in the entrance and its approach, so that the navigable depth varied in consequence more or less, making the channel somewhat tortuous.

Q. State whether or not these northeast winds frequently and entirely changed the channel there of the river, or whether it would fill the channel up?

689 A. Well, it would change the channel, it would change the depth of the water; that is to say, the storms were filling up the channel, and the accumulation of water in the river or bay running out and eroding the channel, making it somewhat different.

Q. Was the course of the channel through the natural entrance—and by that I mean between Wisconsin and Minnesota Points—straight, or sinuous?

A. The approach to the entrance would be sinuous; less so probably in the entrance itself.

Q. Was there a well-defined channel in the entrance there between the points at that time?

A. I should say not a well-defined permanent channel; after the fashion of that inside from the point up the bay or river.

Q. That is, you say it was so permanent?

A. No, I think not.

Q. As the one inside?

A. No, sir.

Q. But was there a channel there at all?

A. Well, there was deep water; there was relatively deep water; the channel varied; I mean from exact location.

Q. State whether or not after the northwest wind blew and in-

terfered with with channel by filling up, the current of the river would immediately cut a new channel or the old one out?

A. The accumulation of water inside would cut out its own course.

Q. And that would change after a northeaster very frequently, would it?

A. That would change—that would deviate.

690 Q. Now, after you got inside there, you say there was a well defined channel?

A. Yes, sir.

Q. What course did that channel take?

A. It took the course I have indicated heretofore in reaching Quebec pier, and thence on, as shown by the chart.

Q. That is, as shown by the Meade chart?

A. As shown by the Meade chart, up to the gate.

Mr. Fryberger: Up to where?

Witness: The gate—meaning between Connor's and Rice's Point.

The Commissioner: In a diagonal direction across the bay?

Witness: It was so.

The Commissioner: Lengthwise of the bay?

Witness: Yes, sir, diagonally, as shown by the chart.

Q. Did you see and observe any evidences of current in the St. Louis River at its mouth there, between Minnesota and Wisconsin Points in the fifty years when you first came up here?

A. Yes, sir.

Q. What were they?

A. Well, apparent to the eye, to observation; the freezing up later in the fall, the open water.

Q. The freezing up later, you say?

A. In the winter; the longer continuance of open water in the winter; the earlier thawing out of the ice in the spring; objects on the bay moving towards that point, in entrance, as logs, drift, ice; common observation and general consent to the fact occurring.

Q. Now, you speak of the mouth there—meaning the place
691 between Minnesota and Wisconsin Points—remaining open water longer than the rest of the surrounding waters?

A. Yes, sir.

Q. To what extent was that?

A. In point of time, long after the bay and the lake was frozen sometimes.

Q. The current keeping it open?

A. The current, I judge, keeping it open.

Q. And you say in the spring it thawed out at the place between the points there, first?

A. Earlier.

Q. That was the first open water then that you would find in the spring of the year, would it be?

A. I think so, prior to the creation of the Duluth entrance.

Q. When was the Duluth entrance made?

A. 1871, I think.

Q. Prior to that time the only outlet of the waters of the St.

Louis River was through the entrance between Wisconsin and Minnesota Points?

A. Yes, sir. The Nemadji River poured its water through that entrance.

Q. As well as the St. Louis?

A. As well as the St. Louis.

(A recess was here taken until two o'clock P. M.)

692 THURSDAY, August 9, 1917—2:00 p. m.

By Mr. Gard:

Q. Colonel Hayes, were you familiar with the channel of the river up through the gate in the '50's?

A. I think I observed the course of river craft from Oneota to the gate. That is, between Rice's and Connors Point.

Q. That was known as the gate, was it?

A. It was called that sometimes for short.

Q. You are familiar with the Meade map, are you?

A. Tolerably.

Q. Does the Meade map show the channel in the vicinity of the gate as you understood it to be?

A. Yes, sir.

Q. Colonel Hayes, The Barrens Minnesota Point have been spoken of here, that is the part of the point near the center or southerly from the center, that is now barren of trees. I will ask you if that has always been barren of trees?

A. My remembrance is that it was covered with timber like the rest of the point, when I came here in '54.

Q. Do you know how it came to be denuded?

A. No, sir, except by fire.

Q. There was a fire that had something to do with it, do you think?

A. I think so.

Q. Colonel Hayes, I believe you said that you knew the proprietors of Superior—I mean Old Superior, that came here in 1854 regarded the waters that are now known as Superior Bay and
693 Allouez Bay as part of the St. Louis River?

A. Yes, sir.

Q. Colonel Hayes, a dike has been spoken of in the evi lence that as I understand it extended from near the end of the outer end of Rice's Point across Superior Bay substantially at right angles with the Minnesota Point shore line to Minnesota Point?

A. Yes, sir.

Q. You were here when that dike was built?

A. Yes, sir.

Q. Knew of its history and how it came to be built?

A. Something of it.

Q. How did it come to be built?

A. When Minnesota or Duluth began to open the entrance, the Duluth entrance, by excavation, and prior to that time it was under-

stood that such was to be the course of things, Wisconsin took alarm on the ground that it would divert the current of the river from the natural entrance between Minnesota and Wisconsin Points and would diminish the scouring course at the entrance—the Superior entrance, and shoal the water so as to impede navigation. And injunction was sought to prevent the cutting of the Duluth entrance. That injunction was granted, as I understand. Then I think by reference to the Engineer's Department of the Government some compromise was sought. Out of that idea grew a suggestion of a dike or bulkhead on the line you indicate, or similar line, to prevent the current of the river from—or, to diminish its effect, to forbid it, rather, from going out the Duluth entrance.

Q. The dike was built?

A. And the dike was accordingly built and existed for a
694 time.

Q. What was the nature of its construction?

A. Cribs, as I remember, of round timber and hewed timber filled with stone or gravel and material. It proved unsubstantial. A great mass of water on the Superior side accumulated and pressed against this barrier. It went through it and it went under it. It was an obstruction to intercourse between the two towns, cities, populations. We had to lift boats over by main strength to get across to Duluth, and vice versa. Then after months, either by arrangement between the two towns, sanctioned by the engineers, an opening was made in the dike through which ferry boats passed unobstructed, and small craft. At that point it was found, as I remember, twenty-five or thirty feet of water, an excavation had been made under the line of the bay. The pressure was enormous and I have observed it. The obstruction was not adequate to its effect as supposed, would be.

Q. That extended above the surface of the water?

A. Oh, yes, several feet.

Q. How far above the surface, about?

A. Well, five feet at least.

Q. There was a railroad track on it?

A. I have seen a locomotive on it and a railroad track.

Q. Ran across to Minnesota Point?

A. Minnesota Point; used for construction purposes.

Q. Was there any act of Congress ordering it put in or taken out?

A. Oh, I think not.

695 Q. I show you Wisconsin's Exhibit 26 and ask you what that is?

A. That is a lithographic copy reduced in scale from the original map of Superior, published about '56. Extensively circulated and much used in those days.

Q. Do you know who got it out?

A. The proprietors of Superior.

Q. The proprietors of Old Superior?

A. Yes.

Q. Now, Colonel Hayes, I will ask you whether or not there is plattings of lots that extended out into the water there?

A. There is; there are.

Q. And those lots are shown on this map as land rather than water, aren't they?

A. Well, submerged lands in fact, in front of the shore line.

Q. I call your attention to the lots extending out in the projection here of Hatch and Stewart Avenues, into the bay, and ask you if those lots don't extend out into the water?

A. They do, from the point indicated, out from your point indicated.

Q. I don't find any shore line indicated there, Colonel Hayes. May be there is one. Just wait. I guess there is. Refer to the finely dotted line there, Colonel Hayes. There is a finely dotted line there.

A. I observe it from your view. I do not see it distinctly without glasses.

Q. But you know there is a dotted line there that was intended to represent the shore line?

A. I never observed that dotted line particularly. I never observed that dotted line, but I presume it indicates the shore
696 line.

Q. You say that map was generally used at that time?

A. Yes, sir, referred to. On it is written "Bay of Superior" and also "St. Louis River," in the bay space. The latter near the entrance; also Allouez Bay.

Q. How long have you had this map, Colonel Hayes?

A. In my ownership and possession since '56.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 26 and ask the privilege to have this map photographed and the photograph substituted for the original, for the reason that Colonel Hayes prizes this as a relic and would like to have it back.

The Commissioner: Received in evidence, with leave to substitute photographic copy and the withdrawal of it from the record.

Q. Colonel Hayes, do you know as a matter of fact that lots have been platted in the waters of Superior and Allouez Bays from the beginning of the ownership of the proprietors up to the present time?

A. Yes, sir.

Q. And do you know whether the titles have been passed on these lots based on the fact that they are in a river and not the lake?

A. I do.

Q. I will ask you whether or not there have been valuable improvements erected on these lots that were submerged under Superior Bay when they were platted and had no connection with land on the shore?

A. Extensive improvements have been made on those lots, those submerged lots.

Q. Name some of them, Colonel Hayes?

A. Flour mills—the Daisy Mill.

697 Q. You mean the flour mills located on Quebec pier?

A. Yes, sir. The Anchor Mill, two elevators, grain elevators, and coal-dock.

Q. You mean the coal-dock at the east end there?

A. Yes, sir.

The Commissioner:

Q. How about that great coal-dock in Allouez?

A. Well, I think the coal-dock in Allouez is in Allouez Bay.

Q. It's on submerged land, isn't it?

A. Yes, sir, I think so.

Q. Do you recall how big that is, the big coal-dock at Allouez?

A. No, I do not. It's very large. It is large.

Mr. Gard:

Q. Do you know whether the docks of the Allouez Bay Dock Company were located on lots that were platted out in the submerged lands and are submerged?

A. I do not.

Q. Have you some idea of the value of the improvements that were built on these submerged lots in the Superior Bay, Bay of Superior, I mean?

A. Do you mean the present improvements from one end to the other?

Q. I mean the money that has been invested in these improvements?

A. From one end to the other?

Q. Yes, on lots that are submerged without shore line connection?

A. Amounts to hundreds of thousands of dollars, as I believe.

Q. Colonel Hayes, you said you were familiar with the Meade map?

A. Yes, sir.

Q. Did you know of Captain Meade being up here at the head of the lakes?

A. Yes, sir.

698 Q. Did you know him when he was here?

A. I knew him in Washington

Q. Is this Captain Meade that made this map the Meade that was general in the United States Army?

A. It is.

Q. And when was he here at the head of the lakes getting the data for the map?

A. In '60 and '61. I think I met him in Washington as he returned to that place, as he told me, in obedience to an order; and we conversed a good deal about Superior and its people. It was before he had taken command.

Q. You said you were a member of the Library Board of the City of Superior, Colonel Hayes?

A. Yes, sir.

Q. I show you a volume here entitled, "Wisconsin and Its Resources by J. S. Ritchie," and ask you if that book is a part of the Superior Public Library?

A. It is.

Q. You took it out of there yourself, did you?

A. Yes, sir.

Q. I will ask you who J. S. Ritchie is or was?

A. He was an early settler, a lawyer, district attorney, and owner of a good deal of real estate.

Q. At Superior?

A. Yes, sir.

Q. Do you know when he came to the city?

A. About '57.

Q. How long did he remain a resident of Superior?

A. To his death.

Q. When was that?

A. I think within three years.

Q. You know of this book, do you, that I show you: "Wisconsin and Its Resources"?

A. Yes, sir, I know the book.

Q. How long have you known of it?

A. Since its publication, '56.

699 Q. This purports to have been published in '60, I guess. Was it published before that date, do you think?

A. I think the title shows.

Q. This purports to have been published in '60. Do you know anything about the time that Mr. Ritchie spent on gathering the information that is contained in this book?

A. No, I do not.

Mr. Gard: I want to offer in evidence a paragraph relating to the St. Louis River, at Page 75, and another paragraph relating to the St. Louis River, at Pages 254 and 255, and want to read them into the record.

Mr. Bailey: We enter an objection as irrelevant and immaterial.

The Commissioner: The paragraphs may be read into the record subject to the objection.

Mr. Gard: I read the paragraph at Page 75, as follows: "The St. Louis River considered is the primary source of the St. Lawrence, flows some thirty miles along the northwestern part of the state. It is navigable a short distance from its mouth and will be more fully described in Part II of this work."

I turn now to Part II and read at Page 254. The heading is "The St. Louis River." "The river rises in the northeastern part of Minnesota and enters Lake Superior on the west. It is extremely rocky and so full of sunken boulders and dangerous rocks that it never could be made navigable further up than Fond du Lac, which is twenty miles from the City of Superior. The action of its waters and 700 those of the lake have formed a narrow strip of land about seven miles in length, jutting out from the Minnesota shore,

which in connection with a similar point from the Wisconsin shore in an opposite direction, forms the Bay of Superior. At the head of this bay the river again widens out into another bay of about the same size, which is called the Bay of St. Louis. From thence to Fond du Lac, the old trading post of the fur company, the river is wide and of sufficient depth to admit a passage of any craft which ply upon the lake. It is somewhat crooked, containing numerous islands, some wooded and others covered with excellent grass and fields of wild rice. The St. Louis flows through a rich level bottom from one to three miles in width, partly timbered and partly covered with natural meadows. From the Bay of St. Louis to the falls its northern shore is bold and rugged. The bluffs on the south side are similar to those of the north for several miles below the fall. Immense quantities of excellent stone suitable for building purposes, and slate are on its banks, and from the surface indications we infer that valuable minerable ores abound. During the past winter the lumbermen have not been idle. The first raft consisted of 2900 logs and was towed by the Steamer Carson on the 24th of May, from near Fond du Lac to the Duluth mill."

Mr. Bailey: What is the date of that?

Mr. Gard: "Entered according to the Act of Congress in 1860."

701 Q. I show you a volume entitled "Toward the Lakes" and "Sketches of a Tour to the Lakes, and the Character and Customs of the Chippewa Indians and of Incidents Connected With the Treaty of Fond du Lac, by Thomas L. McKenney of the Indian Department and Joint Commissioner with His Excellency Governor Cass, in Negotiating the Treaty" and ask you if that book is part of the Public Library in the City of Superior?

A. It is.

Q. You borrowed it from the Public Library, did you?

A. I did.

Mr. Bailey: When was it published, Mr. Gard?

Mr. Gard: It was published in 1827 and is in the form of a diary.

The Witness: I will add further, if you will allow me.

Q. Proceed.

A. In the Public Library of Superior this book belongs to what is called the "Legler Collection," being a collection of rare and old-time books gathered by an industrious collector now librarian of the Public Library of Chicago. He presented this collection as not to be duplicated, hardly to be duplicated, to the Public Library of Superior, and this book belongs to that collection.

Q. How long ago?

A. Oh, I suppose it was seven or eight years ago that he presented it.

Mr. Gard: I will ask to read from Page 270 and 271, being a part of his diary, headed "Thursday, July 27. T. Sunrise 51 degrees."

The Commissioner: Any objection to the offer, gentlemen?

Mr. Fryberger: We would just like to look at it.

702 Mr. Gard: By reference back we find that that date is 1826, July 27th, 1826.

Mr. Bailey: We object to it as irrelevant and immaterial.

The Commissioner: It may be read into the record subject to the objection.

Mr. Gard (Reading): "When within about ten miles of the end of the lake we noticed a line stretching from shore to shore, the north and south shores being about five miles distant, and seemed like a narrow shadow, not very well defined. As we approached near, it became more substantial and when four miles up it was a well-defined beach with trees, pine and aspen scattered irregularly over it from one end to the other, and this was the fond or bottom, or more properly head of Lake Superior. The River St. Louis enters it through this beach which is of sand and which is from thirty to 200 yards wide and diagonal, the mouth of the river being not more than 200 yards wide. We arrived at the head of the lake at four o'clock and pitched our tents on the southwestern side of the beach which is washed by the River St. Louis, and where we were met by about thirty Indians. We were gladly received by them and made them presents, as usual. The chief of the Fond du Lac band was here and had a little son with him, of whom he was passionately fond. He wore his father's medal and was never from his sight, and when he first met us he could scarcely take time

703 to tell us how glad his heart was made by our arrival before he picked up his little boy, who was about four years old, and pressed him through the crowd of Indians, that he might shake hands too. We were soon told by him that it was his son. The north shore of Fond du Lac is mountainous and rolls on beautifully and boldly far beyond where the beach crosses, whilst the south is more level, and less elevated. The beach was doubtless formed by the meeting of the current of the river and the waves of the lake. This was the quiescent part of the water, and so the deposit was made and here doubtless the same cause may continue to keep it. It is a beautiful termination. The beach does not make directly across. It forms a curvature up from the indentation. The river passes out about two-thirds of the distance from the south to the north side of the lake. We are now twenty-four miles of our treaty ground,—of the American Fur Company's establishment, called the Fond du Lac department."

Q. Colonel Hayes, are there trees on Minnesota Point at the present time?

A. Yes, sir.

Q. What are the sizes of those trees?

A. The largest I remember about two feet in diameter and varying, the larger sort, in diameter down to eight inches.

Q. Principally pine, are they?

A. Such as I mention, yes.

Q. I will ask you were you very familiar with the river above Oneota in the early days?

A. Not otherwise than going up in small boats and in excursion boats, which was often.

Q. Do you remember what course the boats took after they
704 went past Grassy Point going up?

A. My recollection is that they often went through the cut-off up by Pokegama Bay into the river.

Q. By "cut-off" you mean the channel southerly of Big Island?

A. Yes, sir; proceeding on to Fond du Lac.

Q. In coming down——

A. In coming down they would take the northern route, north of Big Island, on that course, seeming to be aided by current in going home.

Q. And you remember after they got around Big Island the course they took?

A. They went with reference to the Minnesota shore.

Q. Very close to the Minnesota shore?

A. Yes, sir.

Q. Are you familiar with the Meade map, at that point, I mean?

A. I can't say that I have studied carefully of late years.

Q. But you remember that they went close to the Minnesota shore below Big Island?

A. Yes, down by what is called Millford.

Q. And down through Grassy Point, what course did they take between Millford and Grassy Point?

A. Following not far from the Minnesota side.

Q. You didn't navigate the river yourself, did you, with deep water boats, so that——

A. No, I did not.

Q. You had no occasion to become familiar with the channel then yourself, did you?

A. I didn't. I was not familiar.

Cross-examination.

By Mr. Hanitch:

Q. Colonel, those boats that you say came down on the north channel, did they stop at Millford?

A. I think not. Possibly put off a passenger. I am not
705 aware that they stopped at Millford for any purpose.

Q. Except to take on or let off a passenger?

A. Well, possibly.

Q. Were they excursion boats or freight boats?

A. Excursion.

Q. Went up the river for the special trip, did they?

A. Yes, sir, when I was present.

Q. About what years were those?

A. Well, both before I was away, between '55 and '60, before the war, but more frequently after I returned.

Q. That would be late in the '60's?

A. '66 and on.

Q. What rivers enter into those waters that you have designated as Superior Bay and lower and upper St. Louis, and St. Louis River? What rivers other than the St. Louis enter into these waters?

A. Well, the Pokegama.

Q. Are there two Pokegamas or one?

A. There is one to which I refer, which has a river or stream extending southerly.

Q. There has been a Little Pokegame spoken of here?

A. I think there is no stream there.

Q. That empties into the waters southerly of Big Island?

A. Yes, sir. It is this way from Big Island. It is hardly southerly, is it; easterly, is it not?

Q. We have spoken of the channel on the Wisconsin side as the southerly channel, that is, as the channel along to the south of Big Island?

A. That will do. But as to the River Pokegama I understood you.

Q. Yes, Pokegama, did it not enter into the waters at Big
706 Island?

A. Oh, it is this side.

Q. Then near the Superior entry between Minnesota and Wisconsin Points is there a river entering the waters there?

A. The Nemadji River empties close by.

Q. Very nearly opposite this entry, does it not?

A. Yes, sir.

Q. That is a river of some length, is it?

A. Well, fifty miles or more I should say.

Q. Then into Allouez Bay are there some rivers that enter?

A. Small creeks, Bluff Creek and Bear Creek.

Q. About how long is Bluff Creek?

A. Not longer than eight miles, I think.

Q. Bear Creek is how long?

A. Well, that's small; that's local.

Q. Now, Colonel, what you designated as the proprietors of the townsite of Superior, which was laid out in '54 or '55, none of those gentlemen were residents of Superior, were they?

A. Nelson was. He pre-empted land.

Q. But his home was really in St. Paul?

A. Well, he lived at St. Paul and lived here.

Q. Simply long enough to perfect his title to that pre-emption?

A. Well, he lived here for a while. Nettleton was a proprietor and lived here.

Q. How long?

A. He lived here five or six years.

Q. A great majority of them, however, lived in other parts of the United States and were wealthy men, were they not?

A. They lived in other parts of the United States.

707 Q. This location or platting at that time was a sort of a townsite promotion, was it not, of Superior?

A. I think it was intended to make here a city vying with St. Paul.

Q. Vying with St. Paul?

A. With St. Paul, yes, which was very small then, but the prospects seemed unbounded as to magnitude at the time.

Q. And it was thought there would be a great growth here and a great sale of this real estate, was it not?

A. Doubtless.

Q. And was the foundation for such prospects?

A. I think so.

Q. Now, Colonel, you are a lawyer by profession?

A. Yes, sir.

Q. Under the laws of Wisconsin it would not be lawful to plat lands submerged except they were submerged by waters of a river, would it?

A. It would not be lawful to plat lands in a lake or pond.

Q. So that in order to make title to the lands under these waters it would be necessary to have the waters a river, would it not, under the laws of Wisconsin?

A. I think so.

Q. Now, in the platting of this townsite of Superior, probably as much as one-third of all the lots and blocks which they platted were under water, were they not?

A. I can't say as to the relative proportion, but very many were submerged.

Mr. Fryberger: I guess it will be admitted that that line on the map shows the shore.

Mr. Gard: Yes. That shows it on the map.

Q. So that in order to make good title in the proprietors of these great number of lots as is shown by Wisconsin's Exhibit 26,
708 the proprietors had to designate this, waters of the river, did they not?

A. They had to designate and regard and hold these waters to be a river.

Q. Colonel, some fifteen years ago there was dredging done in the waters of the Superior Bay by Captain Barker and the dredged material was thrown out to the southerly side of the channel, and made what is commonly known as Barker's Island or sand spit along the shore there, was it not?

A. Yes, sir.

Q. Now, that extends practically from the Superior entry to the base of Connors Point, does it not?

A. The island?

Q. Yes.

A. No, sir.

Q. How far would you say it extends to the west? I guess as far as L Avenue or little farther?

A. I know where the islands are but not with reference to avenues.

Q. This sand spit is something over a mile long, wouldn't you say?

A. I should say in that neighborhood.

Q. What is the character of that material, Colonel; what is it, sand?

A. I think it's sand and clay and silt.

Q. Well, isn't it substantially the same character of earth that you have on Minnesota Point?

A. I think there is a good deal of clay mixed with it.

Q. You think there is some clay mixed with it?

A. Yes.

Q. Well, haven't they sold that material there for building sand in the City of Superior?

A. Well, I don't know; I have heard so.

709 Q. Don't you remember that Mr. Lenroot, before he sold that land to the Great Northern, sold considerable of that material for building sand in the City of Superior?

A. I am not acquainted with a single transaction of the sale of sand, personally. I have heard that sand had been taken from those islands.

Q. And used for building purposes?

A. I don't know personally.

Q. Colonel, I think you stated that prior to the '60's none of the boats that you have mentioned as being there in the '50's went beyond Superior Bay.

A. The boats?

Q. Yes. Is that right?

A. That's right.

Q. And the boats which you named, Lady Elgin, Manhatten and the others, were those propelled by steam?

A. Yes, sir.

Q. Were they side wheelers?

A. I think the Elgin was a side wheeler, and some others possibly; I think mostly propellers.

Q. Were they boats of some size?

A. Yes. They were considerable size for those days.

Q. Why did they not go beyond Quebec Pier?

A. I think they had no occasion in point of business.

Q. It was only lack of commerce that prevented them from going up?

A. I think that's true, yes, sir.

Q. The boats which you used then in passing from Oneota down to Superior were largely row boats and canoes, were they?

A. Repeat.

Q. The boats which you used in traveling from Oneota to Superior when you had your pre-emption at Oneota, were row boats or canoes?

710 A. I think that's true.

Q. There were no steamers, steam-boats plying up there?

A. No, not any in——

Q. Not in the '50's?

A. I can't say that there were none. There was lumber exported

from the Oneota mill and from Millford. I can't say that in no case a steamer did not go up there.

Q. I mean so far as you recollect. There certainly couldn't have been many or you would have recollected it?

A. There couldn't have been many steamers.

Q. It would have been an exceptional case?

A. That is true.

Q. When the wind blew from the northeast in those days the current set in from the lake, did it not, at the Superior entry?

A. Water was driven in from the lake.

Q. There was quite a current in that entry, was there not?

A. It was driven in from the lake, yes, sir.

Q. And when the wind ceased the water flowed back?

A. Yes, sir.

Q. About how high, if you recollect, did the wind raise the waters in the bay during those years?

A. Of the exact height I have no knowledge.

Q. Well, round or about, approximately how much, what was the stage of water increased by the wind?

A. Well, I think a foot or two; that's a conjecture.

Q. Colonel, would you say that the waters of the Nemadji being opposite Superior entry would have had effect on the melting of the ice or the prevention of the formation of ice at or near the

711 Superior entry?

A. To a degree. I attribute it largely to the St. Louis currents.

Q. Why, because the St. Louis had more water?

A. More volume, and the water.

Q. You know Captain McDougall of Duluth?

A. Since his shipbuilding enterprise here; not much before.

Q. You didn't know him in the early day?

A. No.

Q. Did you know George R. Stuntz in the early day?

A. Yes, sir.

Q. How early did you meet him?

A. I think as early as '55 or '6; probably in '54.

Q. Was he doing some surveying at that time?

A. He was government surveyor of the townships 49-13 and 14 and also after the Treaty of September 30th, 1854, surveying in Minnesota, I think.

Q. How old a man would you say he was when you met him first in '54?

A. Thirty-five years or so.

Q. You spoke of the Baltimore being the first boat you saw. Was that a steam-boat?

A. Yes, sir, a propeller.

Q. How could the sail-boats get into the bay in the early day? Did they sail in or were they towed in by row boats, or how did they get into the Bay of Superior—I mean in the '50's?

A. There was not much navigation by ships of that sort, vessels of that sort, sailing vessels; mainly vessels propelled by steam.

Q. I think you testified that you thought these boats were twelve or fourteen feet draft. Is that a mere guess on your part or did you have occasion to learn precisely what their draft was?

712 A. Well, my notion, from what I knew and understood was that they were twelve or fourteen when loaded—twelve, we will say.

Q. Assuming that the Soo when it was opened only had a depth of nine feet of water, would you say those boats were twelve?

A. I should say boats of that draft were later and after the deepening of the Soo.

Q. But if the Soo had but nine feet when it was opened in '54 or '5, those boats you wouldn't say had twelve or fourteen feet, would you?

A. Well, coming light, coming unloaded, unladen, they might on that depth.

Q. These boats that you speak of, did they ply other waters than Lake Superior during those days?

A. I think they traded to Lake Erie and down Lake Michigan to Chicago. I think the Lady Elgin, for instance, ran to Chicago.

Q. Did you have any experience in the navigation of boats in these waters at any time since you have lived here?

A. Not as a navigator?

Q. Have you had any financial interest in any of them?

A. No, sir.

Q. You have never had occasion to sound these waters to learn their depths or to learn their channels?

A. I never participated in the soundings or had any occasion to.

Q. So whatever information you may have with reference to the depths are what you have obtained from what they call here the Meade map?

A. And from soundings taken by the proprietors in '54, at the entry.

713 Q. At the entry?

A. And between the entry and Quebec Pier and outside of the entry. I learned this from the number of feet marked on their map, original maps.

Q. But further into Superior Bay than the route which these early boats took to reach Quebec Pier you have no personal knowledge of the soundings?

A. Not by sounding.

Q. When was the light-house built there, Colonel, if you know; I mean the old light-house?

A. 1856, I think.

Q. How near was that to the entry at that time, would you say, Colonel?

A. I don't remember.

Q. Was the entry in those days a little nearer to the lighthouse than it is now?

A. I think probably.

Q. By passing up along the point after entering the bay, I mean Minnesota Point, in a northwesterly direction, did you meet with a

deeper body of water that crossed over to the southerly side of the bay?

A. You speak of which bay?

Q. The Superior Bay. I mean in your testimony here you spoke of the boats coming into the Superior entry and passing northwesterly along Minnesota Point?

A. Yes.

Q. For some distance and then making a detour around to Quebec Pier in a southwesterly direction?

A. Yes, sir.

Q. Was there a deeper body of water by following that course?

A. There was a greater depth of water, found by experience; sometimes had to jettison then; threw over a cargo of cattle once in coming around here.

Q. Let them swim ashore?

A. Let them swim ashore.

714 By Mr. Fryberger:

Q. Colonel Hayes, you spoke about the building of this dike and gave a detailed description of it. As a matter of fact, Wisconsin became unduly alarmed at the time she insisted upon the construction of that dike, did she not?

A. She felt that there was real cause for alarm, as the case was then understood.

Q. She felt that way?

A. Yes.

Q. It turned out afterwards and it was demonstrated, as a matter of fact, that the dike did no good, isn't that true?

A. I think that is true.

Q. As a matter of fact, the opening of the canal on the Minnesota side didn't have the slightest effect upon the waters in the bay, the level of the waters?

A. It did no good in so far as intercepting the current of the Duluth canal.

Q. The next question is the digging of the canal, the opening of the canal on the Minnesota side through Minnesota Point, didn't have the slightest perceptible effect upon the water level in the bay; isn't that true?

A. Oh, yes.

Q. Did it?

A. Oh, yes. The water level fell.

Q. What is that?

A. The water level fell because it ran out through that entrance. I don't say that the permanent level, but at the time the cut was about built there was a measurement, as I remember, of the height of water in the bay, taken by leveling from the end of Wisconsin Point or Minnesota Point, up the beach, up the shore to the canal, and it was some inches higher as I remember, six or seven probably,
higher at the canal, at that end of the bay, as deduced from
715 that survey or level. Then I mean to say that when the new entrance was made the water poured out through in great

volume and in speedy time, in a short time. The action of the water completed the deepening of the cut or increased its depth there by its action on the material and washing out into the lake.

Q. Well, Colonel, when there is a northeaster on and at certain other times there is a tremendous current in through the canal; isn't that true?

A. I think that's true.

Q. And at other times there was a very heavy current out; isn't that true?

A. Yes, sir. The survey I alluded to was made in quiet times. I remember it. I was on it or along with the party.

Q. In a quiet time?

A. Yes, sir.

Q. As a matter of fact, don't you know that there is a rise and fall in the lake level and the bay level constantly?

A. I think that is true.

Q. You think that is true?

A. Owing to storm and atmospheric pressure or some cause.

Q. Owing to storms or atmospheric pressure?

A. Or some cause.

Q. And there is what is termed a tide in this lake, is there not?

A. I have understood so.

Q. Did you ever take any soundings of any kind around this bay yourself?

A. Not in a personal way. I was present sometimes.

Q. You never navigated a boat yourself?

A. No, sir.

Q. You never were wheelsman?

A. No, sir.

Q. Or Captain?

A. No, sir.

716 Q. You didn't run a boat up the upper St. Louis Bay at all?

A. No, sir.

Q. Well, you spoke about going up there on excursions?

A. Yes, sir.

Q. You didn't go up there, I presume, every week on excursions?

A. Not so often; often, however.

Q. Probably two or three times a summer?

A. Yes, sir.

Q. Oftener than that?

A. I went often.

Q. Well, probably not more than two or three times a summer, would you?

A. I won't limit it to that time.

Q. You don't know?

A. I know we went often.

Q. Well, at that time or the time that you went up on those excursions you had nothing to do with the running of the boat, did you?

A. No, sir.

Q. Gave no direction?
A. No, sir.
Q. And you never at any time helped set any of the buoys in the channel?
A. No, sir.
Q. Did you know Alfred Merritt during the early days?
A. In a general way.
Q. Did you know Mr. B. F. Howard?
A. Yes, sir.
Q. John Howard?
A. Yes, sir.
Q. Leonidas Merritt?
A. Yes, sir.
Q. You weren't familiar with the navigation of these bays upper and lower St. Louis Bay and Superior Bay in the same way that they were?
A. I was not.
Q. You knew that they navigated the bay, made that their business in the early days, didn't you?
717 A. Yes, sir.
Q. You knew that that was the business of these men in the early days, didn't you?
A. I know that they navigated the bays, these waters.
Q. But you never had any such business as that?
A. No, sir.
Q. So your observation that you speak of was made as a passenger on those boats when you went on pleasure trips?
A. Yes, sir, and from Oneota, where I lived for a while.
Q. From Oneota going across to Connors Point?
A. Going around to Connors Point, yes, sir.
Q. And you didn't take any soundings; you came in a canoe, did you not, or row boat?
A. I took no soundings.
Q. You could go anywhere on the bay with a row boat, couldn't you?
A. Yes.
Q. You knew that Captain McDougall navigated these waters, did you, in the early day?
A. I think I did but I was not well acquainted with him until he came here and went into business.
Q. You don't claim that you were familiar with those waters in the same way that these navigators were?
A. I do not.

718 D. W. LOCKWOOD was called as a witness on behalf of the State of Wisconsin, was duly sworn by the commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live?
A. I am stationed in Duluth.
Q. What is your official position?
A. I am in charge of the Lake Superior Engineer District.
Q. That is, of the engineers of the Department of War?
A. Yes, sir.
Q. Of the Federal Government?
A. Federal Government.
Q. How long have you been in charge of this office?
A. Since May 1st.
Q. The office is located at Duluth?
A. Yes, sir.
Q. Near the canal?
A. Yes, sir.
Q. You were a retired officer, I believe, were you not, when you went into service?
A. Yes, sir.
Q. By reason of the present war?
A. Yes, sir.
Q. And had you been in charge of district office before you were put in charge of the Duluth office?
A. You mean generally speaking?
Q. For some time in the past?
A. Yes, sir.
Q. What are the duties of district engineer generally speaking?
A. Well, he has general supervision and charge of the engineer, works in the district under the Chief of Engineers.
Q. And that engineering work has to do with the waters, does it?

719 A. Yes, sir.

Q. What does it have to do with the waters in the district?
A. Well, it has to do with regard to the improvement of rivers and harbors, building of breakwaters, possibly, piers.
Q. In those duties does it become the duty of the district engineers to make maps of the waters and harbors within their jurisdiction?
A. Yes, sir.
Q. That is part of their duties?
A. Yes, sir.
Q. When these maps are made are they filed in the office as part of the records of the office?
A. They are.

Q. There are a great many maps in the Duluth office, of the waters around the head of the lakes, are there not?
A. Yes, sir.
Q. They are in your custody?
A. Yes, sir.
Q. Who is your assistant at the Duluth office?
A. Well, there are two principal assistants: Mr. Clarence Coleman and Mr. Taylor.
Q. That is G. A. Taylor?
A. Yes, sir.
Q. Did you direct Mr. Taylor to make copies of maps in response to a request of the State of Wisconsin?
A. Yes, sir.
Q. And he has made copies of those maps?
A. Yes, sir.
Q. And he will produce them here in court?
A. Yes, sir.
Q. Did you have personal charge of the making of these maps, Colonel, or did Mr. Taylor have charge of it?
A. He had direct charge of it.
Q. You ordered him to do it?
A. Yes, sir.
Q. And he has part of those maps here now, has he?
A. I believe he has all but one.

720 Cross-examination.

By Mr. Flynn:

Q. Counsel asked you, Colonel, with reference to the duties of an engineer concerning boundaries. As I understand it, it isn't the duty of an Army Engineer to determine the boundaries between the states, that are in dispute.
Mr. Gard: I beg to correct the counsel. I didn't ask him anything in regard to his duties relating to boundaries.
Q. I understood that; anyway, I would like to ask that question.
A. Not unless specially directed.
Q. By whom?
A. Well, it would come from the War Department.

721 HENRY S. BUTLER was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Mr Butler, you reside in the City of Superior?
A. I do.
Q. How long have you resided in the city?
A. Thirty-three years.
Q. What is your business?

A. I am a lawyer.

Q. How long have you been practising law in the City of Superior?

A. During that period.

Q. Thirty-three years?

A. Yes, sir.

Q. In that time has it been your duties and province as an attorney to pass upon titles to land quite generally?

A. Yes.

Q. You have been connected with an abstract office most of that time there also, haven't you?

A. A part of that time.

Q. Is it or is it not true, Mr. Butler, that lots have been platted in the Bay of Superior that are submerged by the waters of the bay?

A. It is so.

Q. Many of them have no connection with land on shore at all, have they?

A. That is also true.

Q. Do you know whether the titles of those submerged lots have been passed on the ground that the waters submerging them was a river?

A. Titles have been passed to such properties on the theory that they are properties in a river.

Q. And has that been true ever since you began to practice law in Superior?

A. That has been the general view of the profession ever since I have been here.

Q. Do you know whether or not there have been extensive improvements made on lots based on the fact that they were platted on the waters of a river as distinguished from a lake, in Superior Bay?

A. There have been extended improvements made on platted property in Superior Bay, and without question on the theory that these improvements were made on descriptions that were situated in a river rather than a bay.

Q. What is your general understanding of the law of Wisconsin as relates to the difference between the right to plat lots on the waters of the river and a lake, and the title to the submerged portion?

A. My understanding is that the law in Wisconsin allows the platting in a river or a stream so far as the platting does not interfere with navigation, and that there can be no platting a lake or a pond, the reason being that in case of a lake or pond the ownership stops at the edge of the water. In case of a river the fee title being in the owner of the bank subject to the easement which the public has in navigation.

Q. In other words, the ownership of a shore owner goes to what place in the river, goes to what extent?

A. In case of a river the ownership extends to the thread of the stream.

Q. And in case of a lake where does it stop?

A. It stops at the shore line.

Q. Do you know the extent of the improvements that have been made on lots in Superior Bay, based on the fact that it is a river?

A. Very large improvements were made on Quebec Pier in the building of the Daisy Mill I think in the year 1892, and in
723 the same year two flour mills were built on the pier just to the west, Toledo Pier, the Listman Mill, and the Anchor Mill, and on the west side of Toledo Pier, in the same year, an elevator system was put up, consisting of an elevator and a large store-house in connection with it; and then on the pier just to the west, Montreal Pier, the west side of that pier, there was another elevator system of, I think, substantially the same size. Those five mills cost a vast sum of money, amounting to hundreds of thousands of dollars, I would think beyond a million dollars.

Q. If the waters of Superior Bay were lake is it your understanding that there would be any title to that property in the owners of those improvements?

A. My understanding is that there would be no title.

Q. If it was waters of the lake?

A. If the Superior Bay were a lake.

Cross-examination.

By Mr. Hunteh.

Q. Mr. Butler, the improvements which you have spoken of have all been made within the dock line and south of the center of the Bay of Superior, have they not?

A. Yes.

Q. In the examination of these titles have you ever known anyone to take into consideration the old channel that has been spoken of in the Bay of Superior?

A. I do not know as I have.

Q. For instance, Mr. Butler, in the improvements so far as the mills are concerned have you ever heard the owners of that property assert ownership over the old channel that apparently
724 runs alongside of Minnesota Point?

A. I haven't in terms.

Q. What?

A. I have not.

Q. And you haven't heard anyone speak of his property as extending out to that point, have you?

A. I have never heard any owner say that.

Q. And in the improvement of Connors Point haven't the improvements been made out to the dock line regardless of where that channel was?

A. I do not know as I can say beyond this, I think the improvements on Connors Point have extended to the dock line.

Q. Haven't the dock line determined the ownership as to taxation and general transfer of property on the Wisconsin side of the Superior Bay?

A. There has been no taxation beyond the dock line.

Q. Well, in the handling of the property or the sale or transfer of it isn't the dock line, hasn't the dock line been considered as the limitation of the property which you would get?

A. I will answer that this way if I may. I think the understanding is that the shore owner owned to the thread of the channel but subject to the easement of the public for the purpose of navigation and when a dock line was established the understanding has been that that line determined the place within which a private owner might use the property for private purposes, and beyond which he couldn't go.

Q. In the negotiations for the sale or purchase of property on Superior Bay have you ever heard anyone say: "I am selling you a lot that extends clear over to Minnesota point or the middle of that channel?"

A. I never did.

725 Redirect examination.

By Mr. Gard:

Q. The practical use of the land outside of the dock line doesn't differ as between a lake and a river, does it, except as to theoretical title, I am speaking now outside of the dock line and before you get to the thread of the stream?

A. I would think in practice there would be no difference.

Q. That is, the owner's right to build is limited by the dock line, isn't it?

A. Yes, beyond the public has asserted its right to use the stream for navigation.

Q. And they have the same right to use a lake for navigation beyond that?

A. Yes, sir.

Q. And is it your understanding that the owner has the theoretical title to the land of the river beyond that?

A. That is my understanding.

Q. And in practise it doesn't amount to anything more than it does in the water of a lake?

A. Why, I would think that would be true.

Q. But inside of that dock line there is a vast difference, isn't there?

A. Yes.

Q. I mean by that between the shore line and the dock line; and the principal difference being that in the one case lots may be platted on that land between the dock line and the shore line and the other case it can't?

A. That is true.

By Attorney-General Owen:

726 Q. Mr. Butler, these submerged lots were platted before the dock line was established, were they not?

A. Yes.

Q. That is especially true of the old Superior town site?
A. That is what I mean.
Q. Now, have those submerged lots been the subject of barter and sale so that the titles of many of those submerged lots are now held by owners other than the riparian owners?
A. They have been the subject of sale and are owned separate from the ownership of the shore.
Q. The riparian owner?
A. Yes.

Re-cross-examination.

By Mr. Bailey:

Q. So far as building out is concerned there is substantially no difference; that is, in a lake the riparian owner would be allowed to build out without any objection?
A. A riparian owner on the lake has a right to build into the water in the aid of navigation, building docks and piers, so far as he doesn't interfere with the general rights of navigation.
Q. That same is true of a river, isn't it, except theoretically, if it doesn't interfere with navigation.
A. That is true.
Q. As a practical matter the difference is more theoretical than real?
A. In part, it seems to follow from the difference in Wisconsin that you can sever the ownership in a river, as wouldn't be possible in a lake. For example, you may plat in a river and you cannot plat in a lake.
Q. But so far as use is concerned there isn't much practical difference, is there, inside of the dock line in either case?
727 A. There would be this difference that I spoke of, that you couldn't sever in a lake the ownership so as to—
Q. I am speaking of use of the property. There isn't any practical difference in the use of the property out to the dock line in the one case than in the other, is there?
A. Perhaps not.

Re-redirect examination.

By Attorney-General Owen:

Q. You don't think a riparian owner has any right to build a flour mill or elevator or any other commercial institution on the bottom of a lake in this state, do you?
A. I think he has no such right.
Q. The only right he has is to erect such wharves and piers in front of his property as will enable him to reach the more navigable water?
A. I think that's it.
Q. And that is all he can do?

A. He may build such structures as are necessary or desirable in connecting his property with the navigation of the lake.

Q. And then when he doesn't interfere with the rights of others?

A. That's true.

Re-recross-examination.

By Mr. Bailey:

Q. If he wants to build a coal-dock, for instance, he can do that, can't he, in a lake?

A. I think he can build a wharf to connect his property with navigable water or his property with the navigable water of the lake.

728 Q. He could build an iron ore-dock, too, couldn't he?

A. I presume that he could.

Q. And if he could do that he could build an elevator too, couldn't he, if an elevator is a proper thing on a dock to transfer the wheat from the railroad to the water?

A. That would be perhaps an incident to connecting his property with navigation.

Q. And if he can do that he can likewise build a flour mill if the flour mill simply transfers the wheat into flour and he ships it down the lake—anything that's appropriate for a dock?

A. I would question whether he could build a factory?

Q. Well, we are talking about a flour mill now?

A. Well, I so regard a flour mill.

Q. Notwithstanding flour is shipped by water and that was the proper place to load it from the dock into the boats; would you say there was any question; not very seriously, would you, Mr. Butler; of course, provided it didn't interfere with navigation?

A. Certainly couldn't do it if it interfered with navigation.

Q. No. We will concede that.

A. Offhand, I would question whether the flour mill for the manufacture would—

Q. Even if there were a question, the only one that could raise any serious question would be the state itself, wouldn't it?

A. The state owns the bed of the lake.

Q. So the state would be the only one that could raise any question, in any event?

A. Yes, unless it so affected an adjoining owner in the use of the lake.

Q. Well, that would be interfering with navigation?

A. Yes, sir.

729 Re-direct examination.

By Attorney-General Owen:

Q. You wouldn't care to invest any great amount of money in a coal-dock or elevator built out into the waters of a lake, would you?

A. I would hesitate to.

Q. You wouldn't feel very secure in your title or in your right to remain there?

A. I would fear that that was putting private property where it should not be.

730 E. B. BANKS was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Mr. Banks, where do you live?

A. Superior.

Q. How long have you lived in Superior?

A. Thirty-six years.

Q. What is your business?

A. Civil engineer and surveyor.

Q. How long have you practiced that profession?

A. Forty-five years.

Q. How long in the City of Superior?

A. Thirty-six years.

Q. You hold a public office at the present time?

A. I am city engineer.

Q. How long have you been city engineer?

A. About seventeen years.

Q. Consecutively or brokenly?

A. Not continuously.

Q. When were you first city engineer?

A. I was village engineer in '88 and city engineer in '90 and '91, and at different times since, amounting in total to about seventeen years.

Q. And how long have you been city engineer prior to this time?

A. Continuously?

Q. Yes, continuously.

A. Twelve years.

Q. As city engineer or in your professor have you taken soundings and made a map of the Bay of Superior?

A. Not as city engineer.

Q. That was in what capacity?

A. I was engineer for the Northern Pacific Railway in '81, '2, '3, and '4.

731 Q. I am speaking now of your map of the Bay of Superior?

A. Yes.

Q. Was that for the Northern Pacific road?

A. Yes, sir.

Q. I will show you Wisconsin's Exhibit 27 and ask you if that is the map you referred to?

A. That is the map.

Q. How did you make this map, Mr. Banks?

A. This map was made in the office by the draughtsman from notes which myself and other engineers made at Superior in '81 and '82.

Q. Did you superintend or oversee the taking of the data from which this map was made?

A. Yes, sir.

Q. And do you know it to be a correct representation of the waters and lands that it represents?

A. Yes.

Q. Who made the soundings?

A. Most of them were made by me or verified by me. I made soundings from the Superior entry clear to Connors Point in order to verify the Government Engineer's soundings.

Q. The Government Engineer's sounding as shown on what map now do you mean?

A. Well, at that time we had a map showing the Government soundings and we wanted to verify it so I started in and ran a line the whole length and took soundings enough so I could verify the soundings as shown on the Government map.

Q. Did you find them substantially correct?

A. I did.

The Commissioner: Is that the Meade map?

The Witness: No.

Mr. Hanitch: It was the recent maps issued by the Government?

The Witness: It was more recent than the Meade map.

732 Mr. Hanitch: That is, this is a verification of these annual or biannual maps that are being issued, is it not?

The Witness: I can't remember, but I know that we had a map showing the Government soundings and I was instructed to go out and run that whole line over and verify it, which I did; and we put them on to this map.

Mr. Fryberger: Were these soundings made in 1881?

The Witness: No; they were made in the winter of '81 or '2; some of them later than that.

Mr. Fryberger: Verifying some Government map.

The Witness: Verifying a Government map.

Mr. Fryberger: Subsequent to the Meade chart?

The Witness: Yes, sir. They were recent soundings.

Mr. Hanitch: Was this before or after some dredging?

The Witness: This was before there was any dredging except a slight amount running into Quebec Pier, which shows on that map.

By Mr. Gard:

Q. Had there been any improvements made at the Superior entry at that time?

A. Yes; there was a crib along both sides.

Q. Cribbing?

A. Cribbing just as shown on that map.

The Commissioner: Mr. Banks, the cribbing shown at the entry

on this map is known as the old cribbing which has since been torn out?

The Witness: Yes, sir.

733 Mr. Gard:

Q. And replaced with concrete piers on a wider channel?

A. Yes.

Q. In making these soundings did you find a channel extending from between Rice's and Connors Point to the Superior entry?

A. I did.

Q. State whether or not you found that channel well defined?

A. Very well defined, yes, sir.

Q. And is it represented on that map there by contour lines?

A. It is.

Q. And what is that portion colored yellow?

A. That is all that is sixteen feet or over in depth.

Q. And in the channel where you didn't find sixteen feet of depth that yellow color stops, then does it?

A. Yes, sir.

Q. Because the contour lines don't extend across?

A. Yes.

Q. At a point two-thirds of the way to Connors Point from the entry there is apparently a divided channel, is there not?

A. There is, yes.

Q. What was that ground commonly known as; what name in the center of those two channels?

A. It used to be called the middle ground.

Q. Which do you find to be the deeper channel?

A. The southerly channel.

Q. That is the one towards the Wisconsin shore?

A. Yes, sir.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 27.

Mr. Hanitch: Does it show the dock line as it exists at the
734 present time, Mr. Banks?

The Witness: No; the dock line has been changed since this map was made.

Mr. Hanitch: In what way has it been changed?

The Witness: It has been extended. It is approximately the same until you get down to Stinson Avenue, and from Stinson Avenue it runs across the Nemadji Point instead of running into that sharp angle which you see opposite Baker Avenue. It runs in a straight line from Stinson Avenue across Nemadji Point and cuts off a small piece which has been condemned by the Government.

Mr. Fryberger: It doesn't show any dock line as to Minnesota Point at all?

The Witness: No.

Mr. Hudson: This space between the two shaded strips that you have stated the water was sixteen feet or more in depth has figures

between those two points. Does that show the depth of water by the soundings that were made between those points?

The Witness: Yes.

Mr. Hudson: And is that the deepest water in Superior Bay between Minnesota Point and Wisconsin Point, at that place?

The Witness: Referring to that time, it was.

The Commissioner: The exhibit is received in evidence. I would like to ask you one question, whether you found your soundings and the Government soundings substantially agreed?

The Witness: They did.

735 Rec'd Aug. 14, 1917. D. E. Roberts, Commissioner.

FEDERAL BUILDING, SUPERIOR, WISCONSIN,
FRIDAY, August 10, 1917, 10 a. m.

The taking of testimony was resumed before the Commissioner, Hon. David E. Roberts, at the above time and place.

Present: The Commissioner, Hon. David E. Roberts.

On behalf of the State of Minnesota, Hon. Lyndon A. Smith, Attorney-General of the State of Minnesota; Mr. W. D. Bailey, Mr. H. B. Fryberger, and Mr. Louis Hanitch.

On behalf of the State of Wisconsin, Hon. Walter A. Owen, Attorney-General of the State of Wisconsin, Mr. Horatio V. Gard, Mr. Lyman T. Powell, and Mr. T. T. Hudson.

The following testimony was introduced and the following proceedings were had, to-wit:

E. B. BANKS, a witness on behalf of the State of Wisconsin, was recalled, and testified as follows:

Examined by Mr. Gard:

Q. Mr. Banks, did you make a map of the St. Louis Bay for the Northern Pacific Railway Company about the same time you made the Wisconsin Exhibit 27 introduced in evidence?

A. Soon after that; within a year or two after that I did.

Q. How did you come to make that map of St. Louis Bay?

A. Well, that was done for the purpose of locating a proposed Northern Pacific Railway bridge across St. Louis bay from what was then known as West Superior to Rice's Point.

(A large map was marked Wisconsin Exhibit 28.)

736 Witness: I want to correct my statement. There was no West Superior at the time, but afterwards West Superior.

Mr. Fryberger: What is that?

Witness: I say I want to correct my statement with regard to West Superior. There was no West Superior at that time, but afterwards.

Q. But from where West Superior now is; that is what you mean?

A. Yes, sir.

Q. I show you Wisconsin Exhibit 28 and ask you if that is the map you refer to?

A. It is.

Q. Explain how the data for that map was gathered.

A. In the first place, we made a survey of the shore and established triangulation points on Rice's Point and the Main land in Duluth, and from these points we located soundings over the part of the bay that we wished to determine the depth of, and the soundings were located by two sets of instruments—one run by myself and the other run by a man named Dewer. Every sounding was located by two angles from the base line down the shore. We had a boat with three or four men in it, making the soundings and keeping a record of the depth, and each sounding was tied on to the triangulation from the base line.

Q. When was the data gathered from which this map was made?

A. As nearly as I can remember it was in May, 1884. Now it is just possible it was the fall before that, but I think it was in May, 1884.

737 Q. State whether or not the purpose of this map was to form a basis for an application by the Northern Pacific to bridge the St. Louis River.

A. It was.

Q. And do you know whether or not their application was based upon this map?

A. So far as I know it was entirely.

Q. There is a part of this map that is painted a yellowish tint, between Rice's and Connor's Point, and extending on either side. What does that represent?

A. Everything colored yellow is sixteen feet or more in depth.

Q. Had there been any dredging done in that locality prior to that time?

A. No.

Q. Then, that is the sixteen-foot contour line there that marks the outer edge of that yellow coloring?

A. Yes.

Q. Running through a portion of this yellow shading is a broken line, with darts downward, and on those some figures. What is that intended to represent?

A. That is to represent the direction and velocity of the current at the time we made the observation. That was determined from floats which were located at intervals.

The Commissioner: Is the velocity of the current represented on the map?

The Witness: It is in several places.

The Commissioner: How?

The Witness: By figures.

Q. That is per feet per hour?

A. Yes.

Q. The topmost figure is 1440 feet per hour; is that right?

A. Yes, sir.

738 Q. Down a little lower it is 720 feet per hour?

A. Yes.

Q. Down a little lower is 630 feet per hour?

A. Yes.

Q. Down a little lower is 2850 feet per hour?

A. Yes.

Q. And still lower is 2310 feet per hour?

A. Yes.

Q. And still lower 2310 feet per hour?

A. Yes.

The Commissioner: What does that signify in miles?

Witness: The 1440 feet per hour would be a little more than a quarter of a mile an hour. The 1720 would be——

Mr. Hanitch: Is that 1720 or 720?

Witness: 720. 720 would be between one-seventh and one-eighth of a mile an hour. The 1630 would be a little less than a third of a mile an hour, and the 2850 would be a little more than a half a mile per hour; the 2310 would be somewhat less than a half mile per hour.

Q. Mr. Banks, had the Duluth canal been cut at that time?

A. Yes.

Q. How do you account for the current in the lower part there diverging to the left of the yellow portion of the map?

A. Well, of course at this time the lake was lower than the bay and the current would naturally seek the nearest outlet.

Q. And what was that—the Duluth entry?

A. The Duluth entry.

Q. Then you attribute that diversion there from the deep part to the Duluth entry?

A. Yes.

Q. In your soundings did you find what you considered a channel, a river channel, at that portion of the waters?

A. Yes.

739 Q. What is that channel represented by there?

A. By the yellow coloring.

Q. Was the Northern Pacific bridge built on the location that is indicated on this map?

A. It was.

Q. And was the draw, the original draw, located at the place that is indicated on this map?

A. Yes.

Q. How many draws were there in the Northern Pacific bridge when it was first built?

A. One.

Q. And that was on the Duluth side?

A. Yes.

Q. Do you know why it was placed there?

A. On account of its being across the natural channel.

Q. How long afterwards was the draw put in on the Wisconsin side?

A. I do not remember but within a very few years.

Q. Do you know why it was put in?

A. On account of the proposed improvements along the dock line on the Wisconsin side, above the location of the bridge.

Mr. Gard: We offer in evidence Wisconsin Exhibit 28.

The Commissioner: Received.

Q. How far up the waters have you made soundings, Mr. Banks?

A. Do you refer to St. Louis Bay?

Q. Yes.

A. At this time we took soundings very close up to Grassy Point, but they were not within the area required by the War Department and they were not put on the map.

Q. Did you ever take soundings above Grassy Point?

A. I took a large number of soundings above Spirit Lake, near what is called Sabastapool, for the purpose of locating a bridge.

Q. That is about where the Spirit Lake Branch Boat Club
740 is now?

A. Yes. I prepared for the War Department, for a proposed bridge across at that point, and made soundings about a mile each side. I have no data or map showing that, however.

Q. Have you been familiar with the waters of the St. Louis River above Grassy Point?

A. Yes.

Q. How long?

A. Well, probably thirty years.

Q. To what extent?

A. Well, I built a bridge across the St. Louis River at New Duluth in 1891.

Q. That is, the railroad bridge?

A. Yes, sir. And of course I made soundings for that; and I have been up the river quite frequently on excursions and know the route taken by the boats.

Q. Do you know the route taken by boats, commonly taken by boats, after they go through Grassy Point, going up-stream?

Mr. Hanitch: When do you mean?

Mr. Gard: Any time, and then I will fix the time later.

A. I only know at the time that I have been on the boat going up.

Q. When was that?

A. Well, I frequently went to Fond du Lac on excursions; every year once or twice or three times, from 1890 to 1900, and since that time.

Q. Would your knowledge and experience as an engineer cause you to take some notice of the course that the boats took going up the river?

A. Well, I always try to observe things when I am out on a trip like that.

Q. You are familiar with the government soundings of
741 the waters above Grassy Point, are you not?

A. Yes, sir.

Q. What maps in particular are you familiar with, the government maps, showing the soundings?

A. Well, the one I have in mind now is a map made by Dever. I think it is dated 1900.

Q. In your experience you have had to locate channels more or less, have you not, of the river?

A. I have done considerable of that work.

Q. Have you prepared a map of the waters above Grassy Point, showing the main channel of the river? (Placing a map before the witness.)

A. This is the Dever map which I refer to, not made by me or any of the soundings made by me. I have, however, taken this Dever map and colored in yellow where I, from my experience, would place the main channel of the river between Grassy Point and Spirit Lake.

Q. And that channel is colored what on this map?

A. Yellow.

Q. Aside from that yellow coloring, is this the Dever map?

A. It is; that and some lines that I put on it afterwards to show the property lines.

Q. That is, the black lines here.

A. The black lines were put on by me to show the section lines and the property lines.

Q. That is, the harbor line?

A. No; the harbor line was on this map when I got it.

Q. Now, in going up the river on the excursion boats, can you indicate what course they took after they would go through Grassy Point, after going by Grassy Point?

742 A. After passing Grassy Point we took a sharp turn to the right and proceeded northwesterly along the westerly shore of Grassy Point and came quite close to the Minnesota shore, within five or six hundred feet, at what was commonly called Millford; then the channel swung more to the south and afterwards approached the shore again near what is now known as Ironton.

Q. You mean the Minnesota shore?

A. The Minnesota shore. The channel, as I remember it, in passing up and down the river, conforms to that part of this map colored yellow.

Q. When did you do that coloring, Mr. Banks?

A. About a year ago.

Q. For the purpose of indicating the main channel?

A. Yes.

Mr. Gard: Mark that exhibit, will you, Mr. Reporter?

(The map was marked Wisconsin Exhibit 29.)

Q. This map has been marked Wisconsin Exhibit 29, has it?

A. Yes.

Q. That is the map that you have been referring to, on which you indicated the channel in yellow shading?

A. Yes.

Mr. Gard: We offer Wisconsin Exhibit 29 in evidence.

The Commissioner: Any objection, gentlemen? If not, the map is received.

Q. You are familiar with the watersheds of rivers in northern Minnesota, are you, Mr. Banks?

A. I am.

Q. From actual observation?

A. Yes, sir.

Q. What brought you in contact with them?

A. I was engineer for a water power company for years and had occasion to look them all up, and estimated all of the drain-
743 age areas in northern Minnesota.

Q. That is, by field work?

A. No, from recorded maps, government maps. Some particular ones I made actual surveys of, but not all of them.

Q. Did you figure the area of land drained by the St. Louis River?

A. Yes.

Q. What is the area of the land drained by the St. Louis River?

A. Approximately 4,000 square miles.

Q. Does that include to the mouth between Wisconsin and Minnesota Points?

A. Yes.

Q. That includes the Nemadji?

A. Yes.

Q. Did you also figure the area above Thomson or in that vicinity?

A. Yes.

Q. What was the occasion for figuring the area above Thomson?

A. 3,450 square miles.

Q. That is the area above Thomson?

A. Yes, sir.

Q. What was the occasion for figuring that above Thomson?

A. Well, the company that I was connected with was interested more or less with this present water power company; that is, they had considerable controversy with them, and it was necessary for us to know this area in order to deal with them.

Q. It was a company that was in a way a rival of the present water power company?

A. Yes, sir, it was.

Q. Do you know in a general way how much water comes down the St. Louis River past Thomson? First, I will ask you if
744 you know from your own knowledge?

The Commisioner: What does this mean—a month, or a year?

Mr. Gard: Well, any way. I just want to know whether he knows.

A. I have gauged the stream at several times, but only at low water, to determine the minimum flow.

Q. Your object was to determine the minimum flow?
A. Yes.
Q. Why were you interested in determining the minimum flow?
A. The company that I was employed by proposed to turn a certain amount of water into the St. Louis River and take it out again, and it was necessary for us to know the minimum flow in order to determine what we had to contend with. We wished to use a certain amount of the St. Louis River water, and in order to find out how much we could use we had to know the minimum flow, because we assumed the other company was only entitled to the minimum flow at the low stage.

Mr. Gard: I want to show counsel for the State of Minnesota, furnished by Mr. Hawks, a table showing the flow of water. If you have any doubt about it we will subpœna Mr. Hawks.
Mr. Fryberger: Who?
Mr. Gard: Mr. Hawks of the Northern Power Company. That is the table he gave us showing the flow that passed Thomson, as I understand, or passed their dam. (Exhibiting a tabulated statement to counsel for State of Minnesota.)
Mr. Fryberger: Do you offer it?
Mr. Gard: Yes.
Mr. Fryberger: We object to it as immaterial. We do
745 not object on the ground that you have not called Mr. Hawks, but we object to it as incompetent, irrelevant and immaterial.
The Commissioner: The Commissioner cannot see the relevancy of it, but it is admitted.
Mr. Gard: I will have this marked then.
(The tabulation was marked Wisconsin Exhibit 30 (three sheets).
Mr. Gard: Will you admit that Mr. Hawks would testify that is the flow of the water that passed their dam?
Mr. Fryberger: Yes, if you say he would.
Mr. Gard: That is what he furnished us. We simply asked him to furnish us a table of the flow, and he furnished us this table.
Mr. Fryberger: All right. We would object to it on the ground that it is incompetent, irrelevant and immaterial.
Mr. Gard: For the purpose of saving Mr. Hawks the trouble of coming over and testifying, it is stipulated that if Mr. Hawks was brought in court he would testify that this table, Wisconsin Exhibit 30, shows the flow of water of the St. Louis River at the Thomson dam.
Mr. Fryberger: We object to it as incompetent, irrelevant and immaterial.
The Commissioner: The exhibit may be received subject to the objection.
Mr. Gard: Now will you make the stipulation there? It was stipulated——
746 The Commissioner: It is stipulated as stated by counsel for the State of Wisconsin, and the exhibit is received subject to the objection made.

Q. I will ask you to examine Wisconsin Exhibit 30, and ask you

if that in substance corresponds with your determination of the minimum flow of that water?

A. Yes.

Q. What is the minimum water flow per second as shown on that sheet?

A. There is one flow as low as 171 cubic feet a second.

Q. What is the maximum?

A. 26,950.

Q. Does the flow of water vary in different years, Mr. Banks?

A. Yes, and different months of the year also.

Q. Where is Thomson dam located, Mr. Banks?

A. It is near the head of the Dalles of the St. Louis River.

Q. How far above Fond du Lac?

A. Well, now, I could not say, but I should say it is four or five miles.

Q. About how much water comes into the St. Louis River below that point?

A. About 550 square miles below the Thomson dam.

Q. Of area?

A. Of area; yes, sir.

Q. What streams principally.

A. Well, there is the Big and Little Pokegama, and the Nemadji, and Bluff and Bear Creek. The Nemadji includes the Copper Creek and Black River.

Q. Red River up this side of Fond du Lac, or Ward Creek?

A. Well, there are a few small streams but the area is small. I have included that in the 500 square miles below the Thomson dam, and then there is about 50 square miles above, to make the
747 total of 4,000.

Q. The Great Northern Power Company, with which Mr. Hawks is connected, has a dam at Thomson?

A. Yes.

Q. And manufactures power from that dam?

A. Yes, sir.

Q. And supplies the head of the lakes here with power?

A. Yes.

Q. And other places. Do they run on the Range?

A. They are extending a line to the Iron Range now, partly built.

Q. Do you know whether they have developed all of the capacity of the river at that point?

A. They have not.

Q. What portion of it?

A. Oh, not over fifty per cent. That is, I should say, if they can conserve all the water of the St. Louis water shed, they can develop 80,000 horse power.

Q. 80,000?

A. Yes, sir.

Q. Mr. Banks, have you ever made any other tests in the waters of the river, including the base here, to determine the flow of current, than those you have mentioned?

A. Not in the lower river; I have above, at the time that I made

the map for these bridges at New Duluth and at Sebastopol. But this is the only time I have observed the current in the lower river.

Q. Were you here before the Duluth canal was put through?

A. No, sir.

Q. You were not here until after the canal was put through. Do you know what portion of the current is diverted by the Duluth canal?

A. No, I do not.

Q. Do you in a general way?

A. Only theoretically.

748 Q. Have you made any observation, and can you testify, as to whether since the cutting of the Duluth canal, more of the current runs out through that canal or the natural entry?

A. I could not say as to that. My ideas are theoretical only. I never observed.

Q. What do you mean by "theoretical"?

A. Well, I should say that water coming down the St. Louis River between Connor's and Rice's Points would seek the first outlet, because the Duluth entry being nearer the water would tend to seek that outlet rather than one farther away.

Q. It is nearer to the Duluth outlet from Rice's and Connor's Points than to the natural entry?

A. Yes, sir.

Q. About how much nearer?

A. Oh, I should say about two miles nearer.

Q. How far is it, Mr. Banks, from the mouth of the St. Louis River, between Wisconsin and Minnesota Points, to Fond du Lac? I now mean by the river.

A. By the natural channel?

Q. Yes, the natural channel.

A. 22 miles.

Q. That is, by the channel northerly of Big Island?

A. Yes.

Q. By the channel southerly of Big Island it would be shorter, would it?

A. What is that?

Q. By the channel southerly of Big Island it would be shorter?

A. Yes, it would be nearly two miles shorter by that one.

The Commissioner: How does the Nemadji and the St. Louis River compare in size? Which is the larger in size?

Witness: The St. Louis has about eight times the drainage area.

749 The Commissioner: How much in water?

Witness: The total drainage area of the Nemadji is about 460 or 470 square miles, while the area of the St. Louis above the Thomson dam is 3,450. We can assume that the run-off is somewhat in proportion to the area.

The Commissioner: Is the color of the water about the same in the two streams?

Witness: No, the Nemadji is a little more muddy than the St. Louis, because it flows for a long distance through a clay country.

Q. From your observation of the waters between Fond du Lac—and by Fond du Lac I mean the location of the old trading post—and the point between Minnesota and Wisconsin Points, what would you say as to these waters being a river or lake?

A. I have always considered them as a river.

Q. Why?

A. Because there was a well-defined channel for nearly the entire distance.

Q. Was there a current?

A. Yes.

Cross-examination.

By Mr. Fryberger:

Q. Mr. Banks, how long have you lived in Superior?

A. 36 years.

Q. Lived here continuously?

A. Yes, sir.

Q. And of course your interests are pretty well tied up with Superior?

A. Yes.

Q. And have been during all that time?

A. Yes, sir.

750 Q. Did you, Mr. Banks, representing any interest, in Superior, make a survey, extend any lines, through the Carnegie dock and the Zenith Furnace Company dock?

A. Yes.

Q. When did you do that?

A. I could not say exactly, but it was probably two or three years ago.

Q. At the request of whom?

A. The City Commission.

Q. The City Commission of the City of Superior?

A. Yes, sir.

Q. And you had several men with you at the time?

A. Yes.

Q. At the time that you did that, did you run a line across both docks?

A. I ran lines down both docks from the shore, and also made measurements of both docks.

Q. And put tacks in at different places, so you could make your survey?

A. We put in some stakes, yes, and tacks.

Q. And tacks?

A. Yes.

Q. But you personally did not make the marks that now appear on the Carnegie dock, Minnesota on one side of the mark and Wisconsin on the other.

A. I did not, no, sir.
Q. You left nothing but your tacks there?
A. That is all.
Q. Do you recall any of the workmen being about there at the time you were making that survey?
A. Dock men?
Q. Yes.
A. I remember seeing men around there, that is all.
Q. Do you recall talking to the master mechanic of the Carnegie dock at that time?
A. I do not.
Q. Telling him what you were doing?
A. I did not. I think my transit men had some conversation with him.

Q. And informed him that you were ascertaining from
751 your standpoint the state line?

A. I don't know what he told him. I had no conversation with him myself.
Q. But that is what you were doing from the Superior standpoint, is it not?
A. We wanted to ascertain how much of that dock was on the Wisconsin side of the old channel.
Q. And for the purpose of assessment?
A. Yes, sir.
Q. Assessment of taxes?
A. Yes, sir.
Q. On the coal and on the real estate?
A. That is it exactly.
Q. And you think that was about three or four years ago?
A. Well, I don't think it was four years ago; it was about two or three years ago.
Q. Two or three years ago?
A. Yes.
Q. Now, you spoke about this current, the velocity, that you took down near Rice's Point in this channel. Which way was that current flowing at the time that you took it?
A. Flowing towards the lake.
Q. Did you take it when it was coming the other way?
A. Yes.
Q. Did you preserve the record of it?
A. No, we did not, because it was so slight that we did not think it would have any effect on the structures that we proposed to put up.
Q. You took it just once?
A. No, we took the current going down a number of times and made an average of the velocity.
Q. And you think you took it in May?
A. Well, I say I don't know whether it was in May or whether it was the fall before that.
Q. Well, your best recollection is it was in May?
A. Yes.

752 Q. And when we usually have the highest water of course in the St. Louis River, in the spring of the year?

A. Well, there is more water coming down in May than there is later, but the water in the lake and bay is not as high as it is later.

Q. Mr. Banks, at times is it not a fact that the current is very strong setting in from the lake and going up towards Rice's Point, at that point?

A. There is a current setting up towards Fond du Lac of course.

Q. Yes; and at times it is very strong, is it not?

A. Yes.

Q. When there is a big northeast wind?

A. Well, comparatively strong, yes.

Q. You did not take any of the measurements at that time?

A. No; we observed that it did go up stream at times.

Q. The velocity that you ascertained to exist there indicated a very sluggish current, did it not, for a river?. A quarter of a mile an hour is a very sluggish current for a river?

A. That is a small velocity, of course.

Q. The Mississippi averages something like four miles an hour, does it not?

A. I do not think so.

Q. Are you quite sure about that?

A. There may be narrow places in the river where the rate would be about that, but that is a very great velocity for a stream—four miles an hour.

Q. There are plenty of places they navigate on the Mississippi where the velocity is that great; isn't that true?

A. Well, I am not familiar with that.

Q. You are not familiar with that?

A. No.

753 Q. Now, you stated that your only experience, as I understood it, with the navigation of the upper St. Louis Bay above Grassy Point, was the excursions that you had taken up there and also the work that you had done with reference to the construction of some bridges. Is that true?

A. That is true.

Q. What bridges did you build or have anything to do with building above Grassy Point?

A. Well, I built a bridge across at New Duluth in 1891 or 1892; I think it was 1892. That was built for what was then known as the Duluth & Winnipeg Railroad.

Q. What has become of that bridge?

A. It is down here in Whitney's yard.

Q. Taken down?

A. Yes, sir.

Q. Dismantled?

A. Yes.

Q. Did you build any other bridge?

A. No. I made a survey for another one at Sebastopol.

Q. Was that ever constructed?

A. It never was built; no, sir.

Q. And that is your only experience with the soundings at those points?

A. Yes, sir.

Q. Those two. Now, with reference to your navigating the St. Louis river, do you recall who the captains of the boats were on whose boats you *road* at that time when you went up on the excursions?

A. No, I did not know any of them.

Q. None of them?

A. Except Morrison. I remember Dave Morrison as being one of them.

Q. Where is he?

A. Why, he was here in town the other day. I do not know where he is now.

754 Q. That is the only one?

A. The only one that I can remember.

Q. Now, did you never go up the south channel, what is known as the channel south of Big Island?

A. I have been through there, yes, on small boats.

Q. You have been through there?

A. Yes.

Q. About how often?

A. I don't think I ever went through there but once.

Q. On an excursion?

A. I could not say what it was. I know we went up through that south channel once.

Q. Well, are you familiar with the fact that in the early days that was the channel that was most used for navigation purposes?

A. My recollection is that it was not used.

Q. Did you ever hear that?

A. No, I never — it.

Q. You are familiar with the Bayfield chart, of course?

A. I have seen it.

Q. Do you know that the only soundings that are given are through that channel, in that locality?

A. I did not know that.

Q. You did not know that?

A. No.

Q. Did you know that the Bayfield chart was the only chart that the navigators used here or had until the Meade map was made?

A. I did not know that.

Q. You did not know that?

A. No.

Q. Well, did you know that the Merritts and the Howards navigated that stream, run boats up and down there?

A. No, I did not.

Q. You never heard that?

A. No.

755 Q. Did you never hear that Alfred Merritt was master of a vessel for years here?

A. No.

Q. You knew him, did you not?

A. I knew him by reputation only, not personally.
Q. Did you know B. F. Howard?
A. No.
Q. You heard of him of course?
A. Yes.
Q. Knew he was a boat man.
A. Well, I don't remember that I do.
Q. How about Mr. McManus that lived here?
A. McManus?
Q. McManus; did you ever hear of his running a boat as a pilot up the river?
A. No.
Q. Well, did you have sufficient information of the channels of that river to run the boat yourself?
A. No.
Q. You do not claim that?
A. Oh, no.
Q. In going up that south channel, do you know how you ran after you left Grassy Point?
A. No, I don't remember. I know we went through the south channel, but I do not know how we got to it.
Q. The water is very deep in that south channel, is it not?
A. It is in places; yes, sir.
Q. Even deeper than it is in what is known as the north channel; isn't that true?
A. Well, I could not say as to that.
Q. And the velocity of the water is very strong through that south channel, and always has been, during your time; isn't that true?
A. No, I am not familiar with that. I always went the other way and never observed it.
756 Q. Not familiar with it?
A. No, sir.
Q. As a matter of fact, from your own knowledge, all you know about which channel was used was when you would be on the boat; isn't that true?
A. That would be all.
Q. When you would make these excursions?
A. Yes, sir.
Q. You were not on engineering business at that time, of course?
A. No.
Q. You were with your friends, I suppose, going up there for a picnic, weren't you?
A. That is all.
Q. And you were not assisting the pilot or consulting him as to where the channel was?
A. No.
Q. Now, calling your attention to Wisconsin Exhibit 29, you made none of the soundings on that map?
A. No.

Q. And this strip colored yellow here, you have simply colored where you found deep water?

A. Yes, sir.

Q. From the map?

A. Yes.

Q. You don't know whether the measurements from the shore are correct or not, except what appears from the map, do you,—of your own personal knowledge?

A. I do not, no.

Q. And this does not indicate, this part colored yellow, that all the water is at least 16 feet deep along that colored line, does it? That was not your purpose in making the map?

A. It is not possible to determine the exact elevation of that dotted contour line, but I assume it was the sixteen foot line.

Q. I want to call your attention down here to this bar, down here at the most westerly black line on the Minnesota side, right in the middle of your yellow channel; it is marked eight feet six
757 inches, isn't it, or six-tenths, right in the middle of your channel?

A. I think that is 18.6.

Q. You think it is?

A. Yes. The "1" is partly covered up with the black line. It is 18.6. You can see part of the "1" there.

Q. Well, you may be right. Now at the time that this map was made there had been some dredging done there, had there not, on that bar?

A. No.

Q. Well, are you sure about that? This is 1900.

A. No; the surveys were made before the map was dated, you understand.

Q. Yes.

Mr. Bailey: '95 and '6 though.

Q. You do not mean to say, do you, Mr. Banks, with reference to that part I called your attention to, that prior to 1893 there was any such depth of water at that black line I have called your attention to, the most westerly line I should say on this map, or is shown on this map?

A. Why, I assume that was the correct depth.

Q. You understand that Meade's chart shows no such depth of water at that point?

A. I don't think it is possible to locate the two points, to identify the two points on the two plats.

Q. Well, take it up around this island that is shown right off the word "slip," marked in black; I take it that was marked by you?

A. Yes.

Q. And the most westerly word—you have two there?

A. Yes.

758 Q. There is a little island shown right at the end of that slip. Now on the Meade chart it shows a much greater depth of water than is shown on this chart, doesn't it?

A. I have not compared the two.

Q. Well, let us look at the Meade chart. Now calling your attention to Minnesota Exhibit 1. I just want you to examine that chart a minute and see if you find any such depths of water on the Meade chart, at that point, as you have on this map, Wisconsin Exhibit 29.

A. It is not possible to locate that point on the two maps.

Q. Well, right in that channel, don't you find 7 feet right through there, 8 feet, 9 feet, such depths as that? There isn't one at that point—there is not any such depth as you have, eighteen feet?

A. The way it reads is 29, 19, 12, 15, 24, 29, 19, 21, 18, 15, 20, 21, 16, 22, 16, 25.

Q. Well, you are going away down the channel.

A. No, I am all inside of the dock line.

Q. Yes, but I am not asking about that. There are two soundings of 8 feet, are there not?

A. Yes, but that is outside of the channel. The channel shows 19, 12, 15, 24.

Q. Oh, that is not out of the channel.

A. Yes, it is; I beg your pardon.

Q. Have you got any 12 feet in the channel in your map?

A. I don't know.

Q. Well, just look and see. Just examine your map and see if you have any twelve feet there.

A. No.

Q. No. 17 is the lowest that you have on this Exhibit 29, 759 isn't it?

A. At what point?

Q. At any point there.

A. There is 16.

Q. Where is 16?

A. There. (Pointing.)

Q. That is half a mile from that point, isn't it?

A. No.

Q. A quarter of a mile. I am talking about this bar down here.

A. 18, 17, 9, 16.4.

Q. Who was the man that made this Exhibit 29?

A. Dever?

Q. Yes, Dever.

A. He is United States Assistant Engineer.

Q. And when were the surveys made?

A. It states on the map. I don't remember. Made prior to 1900, however, before there was any dredging done.

Q. Before there was any improvement done?

A. Any dredging.

Q. Well, any improvement done at that point?

A. Yes, sir.

Examined by Mr. Bailey:

Q. Do you know whether there had been any work done there by the Zenith Furnace Company or not, at that time, or by its predecessor?

A. No; to the best of my recollection there had been no dredging above Grassy Point.

Q. Well, I said work done—by any of those companies or their predecessors. You do not know that, do you?

A. I do not know, no.

By Mr. Fryberger:

Q. Now, as I understand it, when the boats took the south channel you don't know how they went after they left Grassy Point going up?

A. I could not say as to that.

Q. You never had anything to do with staking out any channels there for the boats to use, putting in temporary buoys?

760 A. Not at that point.

Q. Above Grassy Point I mean.

A. No.

Q. And the only thing you know about the matter of the channel, that is, the channel commonly used by the boats in the early days, before this channel was dredged by the government, is these few trips that you made on excursion boats?

A. Yes, sir.

By Mr. Bailey:

Q. Prior to the time you did the work on this map yourself, you did not pay any particular attention to channels up there, did you?

A. No.

Q. So, you would hardly remember at this time whether the boat on which you just went on an excursion up there, along in the '90's, went around a curve or went a straight line?

A. I know they went around pretty close to the Minnesota shore, and I know we used to land at Spirit Lake.

Q. Sure you landed at Spirit Lake.

A. There was an old wharf there.

Q. I am not asking you whether you went north of Big Island or south, but I say from Grassy Point up. I say you would not remember now, just being on an excursion, and before your attention had been called to soundings or anything else, you would not remember now whether you took a course in one direction or forty rods from it, would you?

A. Well, I remember that we hugged the Minnesota shore pretty close.

Q. As a general proposition you hugged the Minnesota shore?

761 A. Yes.

By Mr. Fryberger:

Q. Let me ask you this: Do you think that from your limited personal experience there you are as competent to testify as to those channels as the men who actually ran the boats, such as the Howards

and the Merritts and the McManuses and the Nortons, or men of that kind?

A. Why, certainly not.

By Mr. Hanitch:

Q. Mr. Banks, looking at Wisconsin Exhibit 28, I notice that there is a line marked here crossing your blue line—is that what you call that blue line?

A. Yellow.

Q. Or crossing your yellow line, which is marked the line taken by sawmill drift. What did you mean by that?

A. Well, we observed the drift coming down the stream and located the general direction that it took.

Q. Now, that took a different direction from the buoys which you located, did it not?

A. Slightly different. The sawmill drift was entirely on the surface, and our float was submerged.

Q. Your float was submerged?

A. Yes.

Q. How deeply did you submerge it?

A. We had a barrel loaded with sand, and with a flag on it; so it must have gone down two feet below the surface at least. The sawmill drift would show on the surface, but our barrel gave the velocity and the direction below the surface.

Q. Below the surface?

A. Yes, sir.

762 Q. You think your buoys were down a couple of feet?

A. Well, it was a barrel partially loaded, so that it was almost submerged.

Q. Almost submerged?

A. Yes.

Q. I notice at the westerly line of your yellow markings, or to the westerly side of Minnesota Point—or Rice's Point—your current seems to pass out of the yellow or deep water?

A. Yes, it does.

Q. Now how do you account for that, Mr. Banks? As I understood you, you accounted for its passing out of the yellow mark and towards the lake because of the outlet at Duluth. Now how do you account for its passing out when it is in St. Louis Bay?

A. Well, the only thing I can think of in that respect is that we deposited this barrel above the line of the proposed draw, and all we were particularly interested in was to get the direction and velocity of the current in the main channel. Now I presume that we deposited this barrel at a certain distance above the line of the proposed bridge and that it took the course that is shown on this map. Now I don't remember all of the details.

Q. Well, at that point which is practically parallel with the line taken by the sawmill drift, isn't it?

A. It appears to be so, yes.

Q. Now, Mr. Banks, why did you limit your yellow space, or stop

your yellow space at the point you did above Rice's Point in St. Louis Bay?

A. Well, I attempted to show that part of the bay where
763 there was 16 feet or more of water.

Q. The deep water from the point where you ended your yellow markings seems to pass down towards the center of St. Louis Bay, does it not?

A. To a short distance.

Q. And then all of these channels seem to fade out, do they?

A. Yes, they fade out.

Q. What course, as you remember it, did the boats take when they went through St. Louis Bay?

A. Well, I don't remember about that.

Q. You don't remember where these excursion boats went?

A. No. There had been more or less dredging done in that territory, and I do not remember back of the time when it was dredged.

Q. Would you say that any of these lines that you have marked here with yellow—would you say they had been dredged?

A. Do you mean since that time?

Q. Well, hadn't you passed up the St. Louis Bay prior to the time you made this map?

A. Oh, I do not think I had.

Q. This map was made when?

A. Back in 1884.

Q. Do you not think you ever went up St. Louis Bay, then, before 1884?

A. I do not believe I did; I do not remember it.

Q. Now, Mr. Banks, did you know George R. Stuntz in his lifetime?

A. No, sir, I never met him.

Q. Never met?

A. No.

Q. Looking at Wisconsin Exhibit 5, Mr. Banks, you will notice there is a strip there between lines and it is marked "Main channel of St. Louis River." What would you say as to whether the
764 engineer making this plat undertook to definitely locate that channel by measurements, or not?

A. There is no evidence on the map that he located a channel.

Q. The evidence on the map showing definite location simply relates to the island, does it not?

A. Yes, sir.

Q. That is, all lines are tied to the island?

A. Yes.

Q. And none are tied to the channel?

Attorney-General Owen: We do not claim that is a survey for the purpose of locating the channel.

Mr. Hanitch: Oh, pardon me, I thought you did.

Attorney-General Owen: Why, no; just a survey of that island.

Q. That map would indicate that that was just a detail that he put in without measurement, would it not?

A. Yes.

Q. Mr. Banks, there was quite an effort made at the time of the building of what is known as the St. Louis Northern Pacific railroad Bridge to have a swing or a draw span on the Wisconsin side, was there not?

A. There was either at that time or soon after.

Q. Did you participate in that?

A. No, I did not.

Q. Did you know anything about what the people of Superior did there, to use as evidence for requiring the span?

A. No.

Q. Don't you know that they brought a dredge there and dug out an opening in the bed of the river to indicate that there was a depth there that required a span?

A. I heard that they did, but I did not know anything about it.

Q. You don't know anything about it?

A. No.

765 Q. In your soundings did you ever discover that?

A. No, sir.

Q. An artificial hole.

A. No, sir.

By Mr. Fryberger:

Q. I just want to ask you one question about this man Morrison. What is his first name?

A. Who?

Q. This man Morrison that you said ran a boat. You said you remembered one of the captains' names.

A. Dave Morrison.

Q. Dave Morrison. What boat did he run?

A. I don't remember the name of the boat.

Q. You don't know what draft the boat had?

A. No; it was a boat very similar to the boat that runs up there now.

Q. Drawing 5 or 6 feet?

A. I don't know, but I should think it was more than that.

Q. But you don't know?

A. No, I do not know.

Examined by Mr. Bailey:

Q. Mr. Banks, you say that this Exhibit 30, that you introduced here, shows that at times there was as high as 24 to 26 thousand cubic feet or cubic second feet of flow at the Thomson dam?

A. Yes.

Q. When there was such a flow as that in the St. Louis river up there, what velocity would you say there would be per hour?

A. At what point?

Q. Well, up near the Thomson dam, but in the natural channel.

A. That would depend on the width of the river and the depth of it.

Q. Well, up in that vicinity.

A. I don't know how wide the river is.

766 Q. You are familiar with the river up there, are you not?

A. Oh, in a general way.

Q. Well, take it in general, down between that point and Fond du Lac. Can you give us some idea about how many miles per hour the flow would be?

A. That is a rapid flow; there would be a great velocity with a very small flow. The velocity would not depend on the amount of water; it would depend on the fall, per 100 feet or mile—more on that than it would on the amount of water. You see there is 5 or 6 hundred feet drop in that district.

Q. Yes. Do you know how far it is from the Thomson dam down to Fond du Lac, in the natural channel?

A. Not exactly.

Q. What?

A. No, I do not.

Q. Well, can't you give us some idea of about how long?

A. I said it was three or four miles, but I would not be certain as to that.

Q. At least that?

A. I never measured it, and never observed it on the map.

Q. Well, I say can't you give us some idea as to about what the velocity of the water would be there when there was such water as that going through?

A. There would be places where there would be a perpendicular fall. Now I could not make any general statement of that kind.

Q. What I am trying to get at is about what the rate per hour would be suppose you put in a barrel at the Thomson dam and it came down to Fond du Lac. Could you give us some idea

767 what it would be with a flow of water like that?

A. No, I could not.

Q. Well, it would be a great many miles per hour, probably 7 or 8?

A. Yes, it would be very swift.

Q. Very likely more than that?

A. Yes.

Q. What?

A. Yes. Given the depth of the stream and the cross-section and the amount of water flowing, I can tell you the velocity, but in a fall like this it would vary; some places it would be perpendicular and other places it would be——

Q. I am trying to get some sort of an average between Thomson dam and Fond du Lac and the natural channel in a flow such as exists. Probably be 10 or 12 miles an hour?

A. I do not doubt it would be 10 or 12 miles an hour.

(A short recess was here taken.)

Attorney-General Owen: May it please the Court, the other day we introduced Wisconsin Exhibits 12, 13, 14, and 15, which were original records of the Land Office of the State of Wisconsin. It

was then understood that we might make photographic copies, and substitute the copies for the original records. I now offer the photographic copies of such original records, and ask that they be marked exhibits in lieu of the originals.

(The photographic copies were marked by the reporter Wisconsin Exhibits 12, 13, 14, and 15, respectively, the same numbers as borne by the originals.)

Attorney-General Owen: We asked Mr. Lampert, Assist-
768 ant Secretary of the State Land Department, of Madison, to furnish us with a list of lands that had been granted to the State of Wisconsin by the United States Government in town 48 range 15, town 49 range 14, and town 49 range 15. His information seemed to be erroneous, and it was agreed that he should return to his office and send us a list. I now have that list and I would like to read it into the record. It is as follows:

Following lands within the townships named have been conveyed by patents from the United States to the state:

Description.	Sec.	Town.	Range.	Acres.	Hundredths.	Date of patent from U. S. to State.
Lot 6.....	9	48	15 W.	9	05	Jan. 25, 1872
Lot 4.....	11	48	15 W.	13	40	Jan. 25, 1872
S. E. S. E.....	21	48	15 W.	40	..	Jan. 25, 1872
N. W. N. W.....	27	48	15 W.	40	..	Jan. 25, 1872
N. E. S. E.....	35	48	15 W.	49	..	Nov. 14, 1881
Lot 2.....	30	49	14 W.	22	40	May 15, 1882
Lot 2.....	24	49	15 W.	48	..	Jan. 10, 1889
Lot 3.....	25	49	15 W.	25	60	Jan. 25, 1872

The lands described below were claimed by the state as swamp under act of September 28, 1850. The claim was recognized by the United States, but before selections were made the lands
769 were conveyed by the United States to private parties. Therefore, other lands, in lieu of these, were granted, and on November 21, 1881, conveyed to the state by patent, pursuant to acts of Congress approved March 2, 1855, and March 3, 1857.

Description.	Sec.	Town.	Range.	Acres.	Hundredths.	Date of patent from U. S. to State.
Lot 3.....	10	49	13 W.	18	10	Nov. 21, 1881
Lot 1.....	29	49	13 W.	1	65	Nov. 21, 1881
Lot 3.....	29	49	13 W.	39	07	Nov. 21, 1881
Lot 4.....	29	49	13 W.	29	50	Nov. 21, 1881
Lot 5.....	29	49	13 W.	44	60	Nov. 21, 1881
Lot 6.....	29	49	13 W.	39	49	Nov. 21, 1881
Lot 1.....	30	49	13 W.	55	60	Nov. 21, 1881
Lot 1.....	31	49	13 W.	42	05	Nov. 21, 1881
Lot 9.....	31	49	13 W.	44	30	Nov. 21, 1881
Lot 10.....	31	49	13 W.	29	60	Nov. 21, 1881
Lot 1.....	32	49	13 W.	17	85	Nov. 21, 1881
Lot 2.....	33	49	13 W.	34	88	Nov. 21, 1881
Lot 4.....	33	49	13 W.	67	80	Nov. 21, 1881
Lot 2.....	34	49	13 W.	65	27	Nov. 21, 1881
Lot 3.....	34	49	13 W.	53	80	Nov. 21, 1881
Lot 4.....	34	49	13 W.	52	50	Nov. 21, 1881
Lot 5.....	34	49	13 W.	28	47	Nov. 21, 1881
Lot 1.....	35	49	13 W.	52	..	Nov. 21, 1881
Lot 2.....	35	49	13 W.	53	67	Nov. 21, 1881

770 E. B. BANKS, Recalled, testified as follows:

Examined by Mr. Fryberger:

Q. Mr. Banks, as a matter of fact, you are mistaken about even Dave Morrison being a man that ran a boat up the river, are you not?

A. No.

Q. As a matter of fact he never ran a boat up that river, did he?

A. He appeared to be in charge of the boat.

Q. Well, wasn't he merely a crier for the selling of tickets?

A. Well, I always supposed he was the captain. I may be wrong.

Q. He never was pilot and never was in the wheel house? He runs a hotel over here, doesn't he, at the present time?

A. I don't know what he does. I know he was on the boat and seemed to have charge.

Q. You never saw him giving orders at the wheel, did you?

A. No, never observed whether he did or whether he did not.

Q. Well, do you feel that he ever ran a boat or ever had papers or knew anything about running a boat?

A. I don't know anything about it.

Q. You remember he was on the boat you were on?

A. I saw him on the boat, and I supposed he was captain. I don't know of course.

Examined by Attorney-General Owen:

Q. Did he have the reputation of being captain at that time?

A. Why, I think so.

771 Q. Commonly reputed to be a navigator on the bay?

A. Why, I have heard him called Captain Morrison. I don't know whether he is entitled to it or not.

Q. He went by the name of Captain Morrison?

A. I heard him called Captain Morrison.

Attorney-General Owen: That is all.

Attorney-General Owen: Now we have here, gentlemen, a number of maps, certified by the War Department. The maps are in one bundle, tied together, and there is one certificate on them. I thought that we could offer the bundle as one exhibit and then sub-number the various maps.

Mr. Fryberger: To save time, suppose you let that go until after the adjournment, and we will come over here about one o'clock and go over them. Otherwise we will have to take time to go over them. Can you do that?

Attorney-General Owen: We are going to introduce them anyway.

We might identify them in the manner I have suggested.

Mr. Fryberger: We do not know what objection we are going to make until we look them over.

Attorney-General Owen: The reporter might mark these.

(The certificate attached to the bundle of maps produced was marked Wisconsin Exhibit 31, and the maps covered by said certificate were marked Wisconsin Exhibits 31-A to 31-L, inclusive, respectively.)

772 G. A. TAYLOR, being duly sworn as a witness on behalf of the State of Wisconsin, testified as follows:

Direct examination.

By Mr. Gard:

Q. Mr. Taylor, you reside at Duluth, Minnesota?

A. Yes, sir.

Q. How long have you resided at Duluth?

A. My residence has been there since 1895.

Q. And what is your present official position?

A. United States Assistant Engineer.

Q. Under Major Lockwood, who testified yesterday?

A. Colonel Lockwood.

Q. Colonel Lockwood, I beg pardon.

A. Yes, sir.

Q. How long have you been Assistant Engineer?

A. Two years.

Q. What position did you occupy prior to that time?

A. I was junior engineer from 1901 to 1915, and inspector from 1893 to 1901.

Q. As inspector what do you mean—inspector of dredging?

A. I was chief inspector of dredging from the spring of 1897

to 1901, and prior to 1897 I was inspector of dredging and *and* breakwater construction.

Q. What were your duties as inspector of dredging?

A. I had charge of the operation of dredges on different work about the harbor, that is, so far as related to the depth of digging and where the digging was done, and so forth.

Q. Was the dredging done by contract?

A. Yes, sir.

773 Q. And under the government inspection?

A. Yes, sir.

Q. And you were representing the Federal government in the inspection work?

A. Yes, sir.

Q. Then when did you first become connected with the government engineer's office at this place?

A. In June, 1893.

Q. Have you been connected with it continuously since that time?

A. Practically. There were times, up to 1896, when there was no appropriation made, and no work in progress, that I was not employed. Since 1897 I have been continuously employed.

Q. At what stage was the dredging in the harbor here at the time you became connected with the office, Mr. Taylor? That is, you may state in a general way that dredging had been done before that time.

A. We had what was known as the 16-foot project for channels in Superior Bay and St. Louis Bay and up the river; I cannot say just where the limits of that project went; and the channel in Superior Bay and the north channel in St. Louis Bay had been maintained to a depth of 16 feet, for various widths.

Mr. Fryberger: As I understand it, prior to the time that you came here?

Witness: Yes, sir; at that time anyway. I do not know just what time that project was adopted.

Q. Now let me see if I understand you. A 16-foot channel had been dredged through the Superior Bay and the northerly channel to a depth of 16 feet had been dredged through the St. Louis Bay; is that right?

A. That is as I understand it, yes.

774 Q. What dredging has been done since you became connected with the office in the waters of St. Louis River and St. Louis Bay and Superior Bay?

A. The project has been enlarged to 20 ft. depth in navigation. The waters or channels in Superior Bay and St. Louis Bay and St. Louis River as far as a little above the outlet of Spirit Lake have been deepened to 20 feet or more. We aim to leave 22 feet for 20-foot draft boats.

Q. When was the channel dredged, or when was the dredged channel made above Grassy Point?

A. What is known as Minnesota channel, St. Louis River, or the present dredged channel was dredged between the years 1900 and 1902.

Q. You include those years, do you?

A. Yes, sir.

Q. That is, it was 1900 to 1902 inclusive?

A. Yes, sir.

Q. Did you have charge of that dredging above Grassy Point?

A. Some of it.

Q. To what extent did you have charge of it?

A. I had charge of all the dipper dredge work that was done up there. The pilot cut as we call it, the first cut through, was made with a hydraulic dredge which belonged to C. S. Barker Company.

Q. What they call a sand sucker?

A. Yes, sir. That dredge was under the direct charge of Mr. H. H. Wadsworth at that time.

Q. Who was connected with the Engineer's office?

A. Yes, sir.

Q. Now, that sand sucker ran over this channel and dredged it out to what depth, approximately?

A. 22 feet.

775 Q. Did the sand sucker dredge it out that deep?

A. As far as they went; they aimed to leave full depth for the width they went; only took one cut through most of the way.

Q. They dredged full depth?

A. Yes, sir.

Q. But did not dredge the full width of the channel?

A. No, sir, they did not.

Q. Where did they throw the material?

A. They discharged it inside of the established harbor line, adjacent to the work that they were doing.

Q. Did they put any of it in the old channel that was found there at that time?

A. Yes, sir.

Q. Considerable of it went in the old channel, didn't it?

A. They discharged enough into the upper ends of these channels as we crossed them to confine the current to the new channel.

Q. That is, wherever you crossed the old channel you tried to fill up the upper end of that channel to keep the current from continuing in the old channel; is that right?

A. Yes, sir.

Q. The dredged channel crossed the old channel at a number of places, didn't it?

A. Yes, sir. I might say that it sometimes crossed it and sometimes followed it for short distances, but practically crossed it.

Q. There is not any place that it went exactly at right angles with the old channel, is there, for any considerable distance? What is the fact?

A. Well, it crossed it once just above Grassy Point, practically at right angles; it was not exactly of course, but practically.

776 Q. There are a great many maps in the files of the Engineer's office at Duluth with which you are connected, are there not?

A. Yes, sir.

Q. Those maps are made by the engineers or people under them, in the course of their business, are they not?

A. Yes, sir.

Q. You made copies of some of those maps at the request of the State of Wisconsin, did you not?

A. Yes, sir.

(A map was marked Wisconsin Exhibit 32.)

Q. I show you Wisconsin Exhibit 32, and ask you if that is a copy of a map that is on file in the office of the District Engineer at Duluth?

A. It is.

Q. Did you make that copy?

A. I did. It was made under my direction.

Q. Yes, that is what I mean. You know that it is a copy of the map?

A. I have compared it.

Q. The inscription is "Sheet No. 1 St. Louis Bay and River; Scale 16 feet to 1 inch," is it not?

A. Yes, sir.

Mr. Powell: Is there any date on it, Mr. Gard.

Mr. Gard: We offer in evidence Wisconsin Exhibit 32.

Mr. Fryberger: No objection.

The Commissioner: The exhibit is received.

Q. Mr. Taylor, I find no date on this Wisconsin Exhibit 32. Can you?

Mr. Bailey: 1873.

Mr. Hanitch: Soundings of 1873.

Q. Can you tell me approximately the date that it was made?

A. I judge from the appearance of it it was made prior to

777 1894, made between 1884 and 1890 I would judge.

Mr. Fryberger: That is the map itself, Mr. Taylor?

Witness: Yes, sir.

Q. And the map shows when the soundings were taken from which it was made?

A. Yes, sir.

By Mr. Hanitch:

Q. What do you mean by that—that the soundings were in 1873?

A. No, sir. May I see that map a minute? (Referring to the map.) The soundings are from the survey made in 1884 and 1885. They are reduced to low-water datum of 1873.

By Mr. Gard:

(A map was marked Wisconsin Exhibit 33.)

Q. I will show you Wisconsin Exhibit 33 and ask you if that is a copy of a map that is on file in the office of the District Engineer at Duluth?

A. It is.

Q. You made the copy, or it was made under your direction?

A. Yes, sir.

Q. It is a true copy, is it?

A. Yes, sir.

Q. This map is inscribed, "St. Louis River from its mouth in Superior Bay to the head of St. Louis Bay, surveyed in 1861," is it not?

A. Yes, sir.

Q. Tell me in a general way just what this map is, that is, from what it was taken and how it was made.

A. As far as our office records show, it purports to be a tracing of the originally made map.

Q. By whom?

A. I do not know who made the tracing.

778 Q. Probably by one of the engineers or some one under his direction?

A. I presume so, otherwise it would not be on file in the office, in all probability.

Mr. Gard: We offer in evidence Wisconsin Exhibit 33.

The Commissioner: Received.

(A map was marked Wisconsin Exhibit 34.)

Q. I show you Wisconsin Exhibit 34 and ask you if that is a copy of a map on file in the office of the District Engineers of Duluth?

A. It is.

Q. This is known as the Farquhar map, is it?

A. Yes, sir.

Q. It is inscribed "Map of the Bay of Superior from a Survey made under the Direction of Major F. U. Farquhar, Corps of Engineers, U. S. A."?

A. Yes, sir.

Q. In 1873?

A. Yes, sir.

Q. This map shows the location of the old dike, does it not, Mr. Taylor.

A. Yes, sir.

Q. And I call your attention to the fact that it shows the Nemadji or Left-hand River; does it not?

A. Yes, sir.

Q. It is called Nemadji or Left-hand River on this map, isn't it?

A. Yes, sir. The word Nemadji means left-hand.

Mr. Gard: I offer in evidence Wisconsin Exhibit 34.

Mr. Fryberger: No objection.
The Commissioner: Received in evidence.

(A map was marked Wisconsin Exhibit 35.)

Q. I will show you Wisconsin Exhibit 35, Mr. Taylor, and ask you if that is a copy of a map on file in the Duluth office of
779 the District Engineers?

A. It is.

Q. That map shows the proposed new or dredged channel as distinguished from the old channel, does it not?

A. Yes, sir.

Mr. Fryberger: What year is that?

Mr. Gard: It is inscribed "Map of Duluth in Superior Harbor district No. 1, showing proposed dredging of 20 ft. channels referred to in advertisement and specifications issued by Major Clinton B. Sears, Corps of Engineers, U. S. A., under date of December 16, 1896," is it not?

Witness: Yes.

Q. I will ask you if that proposed Minnesota channel was ever dredged as it is shown there?

A. No, sir, it was not.

Q. Do you know why?

A. Yes, sir.

Q. State why.

A. It was decided that the money could be spent to better advantage, so far as commerce was concerned, on other parts of the harbor.

Q. Has the Superior channel been dredged substantially as shown on that map?

A. The Superior front channel we call it; yes, sir.

Q. The Superior front channel?

A. Yes, sir.

Q. And the other one has never been made—that is, the channel?

A. The Minnesota Point channel?

Q. The channel named on this map "Proposed Minnesota Point channel."

A. It has never been dredged.

Mr. Gard: We offer Wisconsin Exhibit 35 in evidence.

Mr. Fryberger: No objection.

The Commissioner: The map is received. We will ad-
780 journ until two o'clock.

Mr. Bailey called attention of counsel to the fact that he had discovered among his papers two tax receipts which he had intended to introduce with other receipts of a similar character at the time that Mr. Fulton was on the stand. He stated he desired to offer the receipts at this time as Minnesota Exhibit 51. The receipts were so marked, there being no objection to their reception in evidence at this time, and the same are in the words and figures following to-wit:

MINNESOTA EXHIBIT 51.

Personal Tax Receipt, 1914.

STATE OF WISCONSIN,
Douglas County:

$721.25 No. 879 F.

CITY OF SUPERIOR, WIS., Jan. 23, 1915.

Received of Zenith Furnace Co. Seven Hundred Twenty one & 25 Dollars, in full payment of all Personal Taxes charged on Tax Roll of above City for the year 1914.

2.

Personal tax.	Valuation.	General tax.	Sewer dist. No. 6.	Total taxes.
9 Ward	....	596.25	125.00	721.25

G. W. KANE,
City Treasurer.

(Stamped:) Paid under Protest. Ernest Rickett & Co. Produced at Audit.

781 *Income Tax Receipt.*

STATE OF WISCONSIN,
Douglas County:

$34.50. 818

CITY OF SUPERIOR, WIS., Jan. 23, 1915.

Received of Zenith Furnace Co. Thirty Four & 50/100 Dollars In full payment Income Tax as follows:

Cash	$ .....
Personal Property Tax Receipts	34.50
Total	$ 34.50

G. W. KANE,
Treasurer.

(Stamp:) Ernest Rickett & Co. Produced at Audit.

(A recess was here taken until two o'clock P. M.)

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782 AFTERNOON SESSION,
FRIDAY, August 10, 1917—2 p. m.

Q. Mr. Taylor, I show you Wisconsin's Exhibit 36 and ask you if that is a copy of a map on file in the office of the district engineer in Duluth?

A. It is. I want to ask a question if I may, just for an understanding. Some of these are tracings. They are maps, tracing maps, some of them from copies of originals that we have, an original. Do you consider a tracing a map.

Q. A tracing is on a piece of paper, I don't know whether you call it paper or not, but it is something to take blue-prints off of?

A. Yes, sir.

Q. It is something that you put over the original map and trace the lines on it?

A. Yes, sir, sometimes, and at other times we make the original right on the tracing. I want to be understood in this that some of these, some of them we have the original of, some we only have the tracing of; but they are maps, tracing maps. That is, they are maps.

Q. And they are on file in your office there, the originals or the tracings?

A. Yes, sir.

Q. And is this a true copy of a map that is on file in your office?

A. Yes, sir.

Q. I refer to Wisconsin's Exhibit 36?

A. Yes, sir.

Q. It is inscribed "Duluth and Superior harbor, Districts 2 and 3," is it not?

A. Yes, sir.

Q. And above Grassy Point shows the proposed channel, does it not?

A. Yes, sir.

783 Q. Had that channel been dredged at the time this map was made?

A. No, sir.

Q. It is dated 1896, is it not?

A. Yes, sir.

Q. Was the office getting ready to dredge that channel at that time?

A. Yes, sir.

Q. Now, was the channel finally dredged in substantially the same place that this proposed channel is, the one on the Minnesota side?

A. Yes, sir, above Grassy Point it was.

Q. There is another proposed channel on the Wisconsin side. Was that ever dredged?

A. No, sir.

Q. Do you know why?

A. There wasn't commerce on that side of the river to warrant the expenditure at that time.

Q. Does this map correctly show where the dredged channel crosses the old channel?

A. Yes, sir.

Q. This proposed channel runs through a part of an island that is located practically opposite the Blast Furnace, doesn't it?

A. Yes.

Q. Do you know what the Government did about that island before it dredged the channel through there?

A. Had to acquire title to it.

Q. Had to acquire title to it?

A. Yes, sir.

Q. Had to acquire title to the records in Wisconsin, didn't it?

A. I couldn't say.

Q. Don't remember that, eh?

A. No, sir.

Q. Do you remember whether they condemned or bought the island?

A. They bought it, as I understand it.

784 Q. Do you know who the Government bought the island of?

A. I don't recollect. I think I heard the man's name at the time.

Mr. Bailey: Armstrong, wasn't it?

The Witness: I don't remember. I don't recollect.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 36.

The Commissioner: There being no objection, the exhibit is received in evidence.

Q. Mr. Taylor, I will ask you,—that proposed channel is shown through Spirit Lake, is it not, and across a portion of Spirit Island?

A. It shows through Spirit Island and across a portion of the westerly of Bog Island here (indicating). This is the one that is ordinarily called Spirit Island.

Q. Was that channel ever completed?

A. Not entirely.

Q. It was part of it completed, was it not?

A. It was dredged from a hundred feet wide and twenty feet deep over practically as far as the Bog Island in Spirit Lake.

Q. As shown on this map; that is the island shown on this map?

A. Yes.

Q. Do you know why that wasn't completed?

A. When Colonel Gaillard took office here or took charge of the office he decided that the commerce that existed up the river at that time, the money could far better be spent enlarging the Duluth harbor basin, and got authority to do that work.

Q. I show you Wisconsin's Exhibit 37 and ask you what that is?

A. It is a copy of a map showing where some dredging was

785 done in St. Louis River to remove the bar.

Q. It is described "Map of Bar 1, St. Louis River, December, 1895," is it not?

A. Yes, sir.

Q. And can you locate that bar on the Meade map or do you know exactly where it is located?

A. Yes, I can locate it very closely on the Meade map.

Q. When does the map show that dredging was done in that bar?

A. August, 1893, and May and June, 1895.

Q. That is, it shows that Bar 1 was dredged from A to C in August, 1893, deepened and widened from B to C in May and June, 1895, does it not?

A. Yes, sir.

Q. Now, that is in the main channel of the river as shown on these maps that I have just shown you, is it not?

A. In the natural channel.

Q. Yes, the natural channel. Do you know of any dredging done above Grassy Point earlier than 1893?

A. No, sir.

Q. Do you know of any Government dredging that was done outside of the natural channel of the river at any time prior to 1900?

A. I will say that outside of the deepest part of the channel but not necessarly outside of the channel, entire channel. As I understand it, the channel may be from shore to shore; some of it may be deep and some of it may be shallow.

Q. Was that dredging done in what was marked and outlined as a channel on Wisconsin's Exhibit 36?

A. This particular dredging that I have reference to was above anything that shows on this map.

Q. Was there any dredging done between Connors Point
786 and Spirit Lake except in what is shown on Exhibit 36 as a channel there, the old channel, you call it the natural channel, prior to 1900?

A. Not that I know of.

Q. And the dredging that was done prior to that time was in bars of the natural channel, was it?

A. So far as I know.

Q. And this particular place that is shown on Exhibit 37 was called Bar 1, wasn't it?

A. It is on this map, yes, sir.

Q. And there were bars further up the river that were designated 2, 3, 4, and 5, were there not?

A. I have seen such bars marked on maps in the office.

Q. And that was for the purpose of locating the dredging, I suppose, just a local name given to them in order to know what place you referred to?

A. Yes, sir.

Q. What direction is that Bar 1 from this island that you spoke of that the Government acquired when it dredged the new channel?

A. Northwesterly portion, a little more north than west.

Q. It is more west than north, isn't it?

A. More north than west.

Q. It is really northwest, isn't it?

A. Yes.

Q. Mr. Taylor, will you step to the bench here and examine Min-

nesota's Exhibit 1 and tell us where Bar 1 is located with reference to Minnesota's Exhibit 1?

A. I should say it was about north of a point marked C.

Q. A very little north of the point marked C?

A. Yes, sir.

Q. But in the locality, in the near locality of C?

A. Yes, sir.

787 Q. Do you recall where Bars 2 and 3 to 5 are located now?

A. I don't know. Two, as I recollect it, is about there (indicating).

Q. You are pointing to a place in the main channel practically opposite the island, are you not?

A. It is a little east of north of the island.

Q. As shown on Minnesota's Exhibit 1; is that right?

A. Yes, sir.

Q. That bar was simply a narrowing of the channel, wasn't it?

A. A narrowing and a shoaling.

Q. Did you notice that that chart doesn't indicate the shoaling of the channel, but rather a narrowing of the channel?

A. That may have been the condition at that time, but these bars form from time to time in the channel and when it was removed, in all probability, it was a shoal; otherwise they wouldn't have dredged it, perhaps.

Q. Are you speaking from what you know of that Bar 1 or just what you think it might be?

A. Well, I am reasoning from what often occurs in streams. As a matter of fact, I wasn't acquainted with Bar 1 at all.

Q. We are talking of Bar 2 now, aren't we?

A. Yes. Bar 2 there; and I say I never dredged Bar 1 or 2 either.

Q. Don't you recall, Mr. Taylor, that you have a map of these bars over there and that it shows just simply a narrowing of the channel instead of a shallow place in the channel?

A. In places it narrows up; yes, sir, that's true.

788 Q. As a matter of fact, these bars would change after a freshet, wouldn't they, sometimes?

A. I stated that I have nothing to do with those bars and know nothing about that only as the records in the office show; and in any stream the bars are likely to be formed after freshets and so forth.

Mr. Gard: Wisconsin's Exhibit 37 offered in evidence.

The Commissioner: The same is received.

Q. I show you Wisconsin's Exhibit 38 and ask you what that is?

A. This is a copy of a lithograph map on file in the office of the United States Engineer in Duluth.

Q. It is inscribed. is it, "Map of the Harbors of Duluth, Minnesota, and Superior, Wisconsin, prepared in the office of the Chief of Engineers, U. S. A., from a map made under the direction of Major C. B. Sears, dated June 30, 1893"?

A. Yes, sir.

Q. And that map shows the dredged channel below Grassy Point, does it?

A. Yes, sir.

Q. Had the new channel been dredged above Grassy Point at that time?

A. No, sir.

Q. Do you know what these lines indicate on either side of what is marked "St. Louis River channel" above Grassy Point?

A. They indicate the established dock line and harbor line at that time.

Q. Is that the first harbor line that was established above Grassy Point?

A. First harbor line established by the Federal Government.

Mr. Gard: We offer Wisconsin's Exhibit 38 in evidence.

789 The Commissioner: There being no objection, the exhibit is received.

Q. I show you Wisconsin's Exhibit 39 and ask you what that is?

A. It is a photographic copy of a map of the St. Louis River from Grassy Point to Ironton, dated December, 1893.

Q. This is a map showing the channel without the shore line, is it not?

A. Some of the shore line doesn't show very well on this reproduction, but I guess there was probably a faint outline in the original.

Q. There is a line shown on this map crossing the channel at a number of places, and I will ask you what that line is intended to represent?

A. That is a harbor line that was established in 1894.

Q. Did that succeed the harbor line that you just referred to on Wisconsin's Exhibit 38 that was established in 1890?

A. Yes, sir.

Q. Was this the next established harbor line at that point above Grassy Point, I mean, and this harbor line shown on Wisconsin's Exhibit 39 was established in 1894?

A. Yes, sir.

Q. By the Federal Government?

A. Yes, sir.

Mr. Gard: Offer in evidence Wisconsin's Exhibit 39.

The Commissioner: Received.

Q. Some of the copies that you produce, Mr. Taylor, are very faint and almost illegible. Will you just state why that is?

A. Some of these maps we had only blue-print copies in the office, and in order to get a copy it was necessary to print from the

790 blue-print, which does not give a very good reproduction.

Q. I show you Wisconsin's Exhibit 40 and ask you what that is?

A. It is a copy of a map in the office, the Engineer's office at Duluth.

Q. This map is inscribed "Abridged copy of map showing harbor lines, approved December 5th, 1894, by the Secretary of War," is it not?

A. Yes, sir.

Q. On this map is the following quotation: "No encroachments on present natural channel will be permitted until after all channels have been provided where necessary." Do you know what that means and what it is a quotation from?

A. It reads "Until artificial channels have been provided."

Q. I couldn't make that out. That's what it is, I guess?

A. I presume that is quoted from some regulation of the War Department relative to improvements in rivers.

Q. Designed to protect the old channel until the new one was completed?

A. It is designed not to let the new work interfere with navigation.

Q. It says: "No encroachments on present natural channel will be permitted," doesn't it?

A. Yes, sir.

Q. Does this Exhibit 40 show the dock line as established in 1890 and also the one established in 1894?

A. Yes, sir, in that locality.

Q. That is above Grassy Point, I mean?

A. Yes, sir.

Q. The one established in 1890 is marked "Old harbor line," is it not?

A. Yes, sir.

791 Q. And the other is marked "Harbor line," is it not?

A. Yes, sir. The old harbor line is a broken line you will notice, while the existing harbor line at that time was a full line.

Q. In 1894 or what is there the full line had superseded the broken line?

A. In that locality, yes, sir.

Q. That is above Grassy Point?

A. Yes, sir.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 40.

The Commissioner: The exhibit is received.

Q. I show you Wisconsin's Exhibit 41 and ask you what that is?

A. It is a copy of a map entitled "Map of Proposed Minnesota Channel of the St. Louis River, District Number 3, dated August 1900."

Q. It shows the waters from just below Grassy Point up to Spirit Lake?

A. Yes, sir.

Q. And this proposed Minnesota channel is shown on this map how?

A. It shows in very faint lines, the lines were in pencil on the tracing and they only show faintly on the blue-print.

Q. Is there a new harbor line shown on this map?

A. Yes, sir.

Q. Now, is this the third harbor line that was established above Grassy Point?

A. Yes, sir.

Q. And that superseded the two harbor lines that you have spoken of before?

A. Yes, sir.

Q. When was this harbor line established?

A. In 1899.

Q. Then the first was established in 1890, the second in 1894, and the third in 1899; is that right?

A. Yes, sir.

Q. This proposed Minnesota channel is just southerly of
792 this 1899?

A. Yes, sir.

Q. That proposed channel was finally dredged, was it not?

A. Yes, sir.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 41.

The Commissioner: Exhibit received.

Q. I show you Wisconsin's Exhibit 42. That is a copy of a map of the gate, is it?

A. Yes, sir.

Q. Dated 12/1896, is it?

A. Dated January, 1886.

Q. Dated January, 1886?

A. Yes, sir.

Q. By the gate is meant the place between Rice's and Connors Point, is it?

A. Yes, sir.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 42.

The Commissioner: Received without objection.

Q. I show you Wisconsin's Exhibit 43 and ask you if that is a copy of a map on file in your office?

A. Yes, sir.

Q. Do you know how long this map has been on file in your office?

A. No, I do not.

Q. I will ask you if you know what this memorandum in red on the map refers to: "Copy of map sent to Major Lusk, May 25th, 1904, with copies of letters sent to Chief of Engineers, February '03, and governors of Minn. and Wis. April '03."

A. I know nothing more about it than what it says.

Q. And do you find letterpress copies in your office of letters sent to the governor of Wisconsin on April 1st, 1903?

A. Yes, sir.

Q. I show you Wisconsin's Exhibit 16½, which purports
793 to be a photographic copy of a letter to Governor La Follette, from D. D. Gaillard, dated April 1st, 1903, and ask you if you recognize that as being the same letter a copy of which is in your office bearing the same date?

A. Yes, sir, that is the copy.

Q. That is, Wisconsin's Exhibit 16½ is the photographic copy of a letter, a letterpress copy of which you have in your office?

A. Yes, sir.

Q. I show you Wisconsin's Exhibit 44 and ask you if that is your office index reference to the map, a copy of which you have produced as Wisconsin's Exhibit 43?

A. Yes, sir.

Q. That index is "20/9 C. C. H. T. 1500," indicating the scale. Date "1904. State line. Copies to governors Wis. and Minn. and C. of E.", is it not?

A. Yes, sir.

Mr. Gard: Offer in evidence Wisconsin's Exhibits 43 and 44.

The Commissioner: Received.

Cross-examination.

By Mr. Fryberger:

Q. Mr. Taylor, that bar that you spoke of as Bar 1 that was dredged in the year 1893 you were not familiar with at all?

A. No, sir.

Q. Prior to that time you didn't know what the steam-boat channell of Grassy Point had been, of your own knowledge, and the bar was dredged out before you had anything to do with the work up that far?

A. Yes, sir.

Q. Now as to whether there was any prior dredging done, that you have no personal knowledge of?

A. No, sir.

794 Q. Mr. Taylor, you have been familiar with this harbor work for a good many years, haven't you?

A. Yes, sir.

Q. Now, as a matter of fact, in your opinion, you wouldn't place the mouth of the St. Louis River at any lower point than Grassy Point, would you?

Mr. Gard: Objected to as not proper cross-examination. We have no objection if they want to make the witness their witness, and I make this statement for the reason that we have found this witness to be a very unwilling witness for the State of Wisconsin.

Mr. Fryberger: I want to enter an objection upon the record to any such statement as to this witness, as it appears affirmatively from his testimony that he is perfectly honest and fair.

Mr. Gard: I am not finding any fault with what he has testified to, but we have been in contact with him for several days, and know his attitude, I think, and if they want to make the witness their witness I have no objection to their asking this question.

Mr. Fryberger: I wish to object and except to the statement, on the record, on the ground that the statement is insulting to the witness and entirely unfair on the part of counsel.

The Commissioner: I think the statement is uncalled for by the counsel but I do think that his objection to the cross-examination of this witness on matters not gone into on direct examination is well

taken. If you want to examine him on that subject you may call him on that subject.

795 Mr. Fryberger: I don't care to get into a discussion with the Commissioner but I will simply state that he has been called on a lot of maps with all these statements on them with reference to the St. Louis River, and things of that kind, and so I think it is eminently proper, and we will take our chances with the Supreme Court when we reach it.

Q. (Question repeated by Reporter.) "Now, as a matter of fact, in your opinion, you wouldn't place the mouth of the St. Louis River at any lower point than Grassy Point, would you?"

A. The natural evidence that we find would tend in my mind to point to the fact that in all probability in prehistoric times the mouth of the river might have been at Grassy Point.

Q. Well, let me call your attention, Mr. Taylor, to these maps, one of these maps. I call your attention to this map that is marked Exhibit 31-I and to the words up to the northerly of Big Island: "St. Louis River Channel". Do you notice that?

A. Yes.

Q. And below Grassy Point, to the words marked "St. Louis Bay." Now I want to ask you if it isn't a fact that your office has constantly since you have been there treated the waters above Grassy Point, at least, as being the river and below Grassy Point as being the bay?

A. It is always designated as Superior Bay and St. Louis Bay below Grassy Point.

Q. And above that?

A. Above that St. Louis River.

Q. I will ask you whether or not that question of where the mouth of that river actually is hasn't been in dispute and a matter of doubt ever since you have been here?

796 A. I don't think it has been discussed particularly in our office.

Q. Well, I mean generally?

A. I have heard some discussion about it of late years.

Q. Is it not a matter, in your opinion, about which men equally capable and honest might differ?

A. Yes, sir.

By Mr. Hanitch:

Q. Mr. Taylor, on Exhibit 41 there was, at least on one of Wisconsin's exhibits there is a regulation prohibiting the wasting of material into navigable channels. Do you remember that regulation. It was called to your attention?

A. I don't know that that's a regulation on there. I said perhaps it was quoted from some regulation.

Q. Some general regulation of your department, War Department?

A. Yes, sir.

Q. Now I think you testified that when you were putting in the new channel up the St. Louis River that you did waste that in 1900;

you did waste that material into what has been designated here as the old channel, did you not?

A. Yes, sir.

Q. Is it a fact that there were other channels that were being used at that time and that the wasting of the material into that channel did not interfere with navigation?

A. There was no great interference with navigation. The commerce up the river at that time was largely in the nature of excursion boats of light draft and they could go other ways, and it was only a short time, in fact I think that my first answer that you refer to might be misleading in a way, I wouldn't be positive that
797 these channels were closed with the first cut there. They may have been closed with the second cut, perhaps, after there was width enough in the new channel so that a boat could go through.

Q. But the old map shows, that is, the oldest map that has been introduced here by the Wisconsin side, being Wisconsin's Exhibit 33, shows that there was ten feet of water in the natural channel, running northwest right up to the head of this little island, part of which was taken for the new channel, does it not?

A. There is such a channel for that distance.

Q. And from that point on there is a depth of water of seven feet, substantially, to a place in the old channel, to a bar which was dredged out some time in '93, is there not?

A. Yes, sir; it shows six or seven feet, there.

Q. So that it was perfectly feasible for the boats that were running in the bay, the upper Bay of St. Louis, with the draft which they had, to take this last mentioned channel I have referred to that runs up to the head of this island, and pass on north of Big Island, was it not?

A. Boats never used that channel, to my knowledge, in going that way.

Q. Well, did you have any knowledge of the navigation there prior to '93?

A. No, sir.

Q. While you were closing up the old channel what channel did they use?

A. Some of them went partway up the channel you mentioned, but they kept to the south of what we called Pancake Island, which is the island opposite, about opposite the Blast Furnace, and then went into the cut-off channel.

798 Q. Went up the river that way?

A. Yes, sir.

By Mr. Bailey:

Q. This Pancake Island, as you call it, was a low, marshy island, was it?

A. Yes, sir.

Q. And scarcely any, if at all, above the surface of the water?

A. Very little.

Q. Overflowed to some extent when there was a big freshet in the spring or when the lake was pretty high, did it?

A. Yes, sir; it was boggy and soft; you couldn't find a place on it, so far as I ever found, that you could go dry-footed without you walked on logs or something of that kind.

Q. And as a matter of fact, it was never surveyed in the original survey or for about forty years afterwards, was it?

A. I couldn't say.

Q. Don't you happen to know that it was surveyed just about the time that you came to the Engineer's office?

A. No, sir, I do not.

Q. And the Government did purchase it, though, and of course still holds the title?

A. Yes, sir.

Q. Now the present dredged channel above Grassy Point, at any rate, is substantially midway between the shores, is it not, the banks—I say "substantially"?

A. Oh, I should say it was nearer the Minnesota side than it was the Wisconsin side, most of the way, except around Big Island.

Q. Well, there is not very much difference, is there? Of course, it's rather hard to tell exactly where the shores are?

799 A. Below Big Island I should say, I never scaled it, but I should say it was two-thirds of the width of the water was on the Wisconsin side of the channel.

Q. Well, that is taking in Pokegama Bay and things like that?

A. No, not taking in the little bays.

Redirect examination.

By Mr. Gard:

Q. That island that you call Pancake Island was known as Snowshoe Island, wasn't it?

A. It may have been; I don't know about that. We always called it Pancake. I don't know where we got the name.

The Commissioner: Was that the island that was resurveyed by Stuntz in 1893?

Mr. Gard: That is the island.

Mr. Hanitch: That is the island that was partly removed in digging the new channel.

The Witness: It was one of them, yes, sir.

By Mr. Gard:

Q. On Wisconsin's Exhibit 33, Mr. Taylor, the waters of St. Louis and Superior Bay are designated as St. Louis River, isn't it, "From its mouth in Superior Bay to the head of St. Louis Bay"?

A. That is the title of this map.

Q. Well, you understand that that refers to the waters here called Superior and St. Louis Bay?

A. Yes, sir.

Q. And that they were called a river, St. Louis River; isn't that right?

800 A. It says: "Mouth of St. Louis River in Superior Bay."

Q. It is St. Louis River from its mouth in Superior Bay to the head of St. Louis Bay, isn't it?

A. Yes, sir.

Q. Now, that mouth can't refer to any place except the natural entry, can it?

Mr. Fryberger: I will object to that on the ground that speaks for itself just as well as he can.

The Commissioner: I think the objection is well taken but the witness may answer if he can.

A. If I were to interpret that title I would say that they considered the mouth of the river, or the river, as emptying into the Superior Bay.

Q. That is the way you interpret that, is it?

A. It says, the mouth of the river in Superior Bay.

Q. St. Louis River from its mouth in Superior Bay to the head of St. Louis Bay, isn't it?

A. Yes, sir.

Q. Now then, what territory does this map cover?

A. Covers Superior Bay and St. Louis Bay up a short ways above Grassy Point.

Q. Well, don't it cover Superior Bay, don't it cover the Superior Bay from the natural entrance?

A. Yes, sir.

Q. To the head of St. Louis Bay?

A. Yes, sir.

Q. Well then, doesn't that mean St. Louis River, just what it says: "From its mouth in Superior Bay", which means the natural entry to the head of St. Louis Bay, which means Grassy Point?

A. I couldn't say that that meant the natural entry.

Q. Where does this map begin and where does it end?

801 A. It shows some of Lake Superior and ends in St. Louis River above Grassy Point.

Q. It just shows the natural entry there as running out into Lake Superior, does it?

A. It shows some soundings in Lake Superior also.

Q. Just opposite the mouth or just opposite the channel?

A. (No answer).

Q. You understand it the other way, do you?

A. I am just taking what it says there.

Q. I want to know what you understand it to be.

A. I understand that to read that the mouth of St. Louis River was in the Superior Bay.

Q. What part of Superior Bay?

A. It doesn't say.

Q. Well, can't you tell where that map extends from and can't you tell where that was intended to designate the mouth of St. Louis River?

A. I think I can.
Q. Where do you think it intended to designate it?
A. I think it intended to designate it somewhere near the gate.
Q. Then in designating this map they left off all below the gate, between that and the natural entrance; is that right?
A. No, they show Superior Bay there.
Q. On the map?
A. Yes, sir.
Q. But in the designation there, according to your idea, they left off all outside of the gate. I am referring now by the designation to "St. Louis River from its mouth in Superior Bay to the head of St. Louis Bay"?
A. Yes, sir.
802 Q. They left that off?
A. They don't say where the mouth is. They say it's in Superior Bay.
Q. And you think they intended to mean at the gate?
A. Somewhere in Superior Bay, possibly the gate; I don't know just where their intents are.
Q. Do you remember a tracing of the Meade map in your office, in two sections, one designated St. Louis River from Superior entry to Grassy Point and another St. Louis River from Grassy Point to Fond du Lac.

The Commissioner: What was that question, Mr. Gard?
Mr. Gard: He has testified that they considered in the office there that the mouth of the St. Louis River was somewhere in the vicinity of Grassy Point, as I understand it.
The Commissioner: Is that material?
Mr. Gard: I think so, or I wouldn't ask it.
The Commissioner: Why not let the witness testify to the fact and let the Court draw its conclusions. Draw out of the witness the geographical facts and let the Court draw its conclusions.

Q. (Question read.)

The Commissioner: That asks if he remembers a tracing. He may answer that.
Mr. Fryberger: I am going to enter an objection there on the ground that it is not the best evidence, asking this witness concerning documents whose absence have not been accounted for.
The Commissioner: Go ahead and answer the question.

803 A. I don't remember such a copy of the Meade map.
Q. Do you remember that there is a tracing there of the Meade map?
A. Yes, sir.
Q. More than one?
A. Not that I remember of.
Q. Do you remember a tracing of the Meade map in two sections?
A. No, sir.

Q. Don't remember that?

A. No, sir. We have a copy of the Meade map here in evidence from a tracing that we have in the office. That is the only one I know of.

Q. Would you undertake to say that there isn't a tracing of the Meade there in two sections as I have indicated?

A. I don't know that.

Q. Have you your index here?

A. No, sir.

Q. Haven't the index here?

A. No, sir.

Mr. Gard. At this time we offer in evidence Wisconsin's Exhibit 31, A to L inclusive.

The Commissioner: The exhibits are all received in evidence.

804 LEWIS LACHAPELLE was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Mr. Lachapelle, where do you live?

A. In Ashland.

Q. How long have you lived in Ashland?

A. Been there seven years.

Q. Where did you live before going to Ashland?

A. I lived in Duluth.

Q. How long did you live in Duluth?

A. I was in Duluth for about twenty years.

Q. What is your business?

A. Sailing.

Q. Do you have a license to sail boats on the waters here at the head of the lakes?

A. Yes, sir.

Q. What kind of a license have you?

A. Got a first-class pilot license.

Q. How long have you had a pilot license to sail at the head of the lakes?

A. About 28 years.

Q. Have you ever sailed the waters of the St. Louis River up above Grassy Point?

A. Yes, sir.

Q. When did you first sail these waters?

A. It was in the year 1892.

Q. By "sail" we mean navigate, don't we; you don't mean that you navigated with a sail boat, do you?

A. No, sir.

Q. You mean you navigated, then, with what kind of a boat?

805 A. This was a little passenger boat, Steamer S. B. Barker.
Q. Who were you operating it for?
A. Smith & Morrow; Fred Smith and Charlie Morrow.
Q. Were you operating it as an excursion boat?
A. Yes, sir.
Q. Between Duluth and Superior and Fond du Lac?
A. Yes, sir.
Q. How long did you operate it to Fond du Lac?
A. I was on about four months I think that season.
Q. Season of 1892?
A. Yes, sir.
Q. How do you fix that date?
A. Why, I have some back records that showed the year, and it was the year before the World's Fair in Chicago; that was in '93.
Q. How often did you go up the St. Louis River?
A. We went most every day after the season opened up so we could run there.
Q. During the excursion season?
A. During excursion season.
Q. You ran that entire excursion season up the St. Louis River?
A. Yes, sir; up until some time in September, I think it was.
Q. And did you operate that boat more than the one season?
A. No, sir.
Q. What were your duties on the boat?
A. I was sailing the boat; captain the first part of the season up until some time in July, I think it was, and then I went clerking and mate on the boat.
Q. The rest of the season?
A. For the rest of the season, yes.
Q. As mate what were your duties?
A. I used to handle the boat when it came my watch, and any time the captain wasn't there.
Q. What do you mean by "handle the boat"?
806 A. Why, any time we moved her I had the handle.
Q. That is, you steered it, you mean?
A. Steered it, yes, sir.
Q. What course did you take after you passed Grassy Point?
A. We went about south up to Grassy Point or to the turn at Grassy Point.
Q. And then what course did you take?
A. We went about northwest, I think, after we made the turn at Grassy Point.
Q. How close to Grassy Point did you follow?
A. We kept very close to the Grassy Point side till we got up to near the old Blast Furnace.
Q. I show you Wisconsin's Exhibit 29 and ask you if you can show us what course you took above Grassy Point, on that map?
A. From Grassy Point do you mean?
Q. Yes.
A. We used to come up from the bridge up there and south, made a turn over here a little, right from the bridge. And after we made

that turn there turned about south up here till we got to the second clay bank up here. I don't know which is the banks here; but it was the second bank of clay that showed up there (indicating).

Q. You are pointing to a place right opposite the end of Grassy Point?

A. Yes, sir.

Q. On the Wisconsin shore?

A. Yes, sir.

Q. That is almost south of Grassy Point, isn't it?

A. Not quite. We turned with the stern of the boat, on that red clay bank as our ranges till we got to the turn down here where the Blast Furnace is, and then we commenced to turn when we
807 got to the end of this what you call Grassy Point. Of course I don't know it now on the map, but there was a smoke-stack down here and a gap in the hill up there from the old Blast Furnace that we used to have for ranges when we turned down there, and when we got outside of the Old Blast Furnace we turned again inside of that little island. I think it was called Snowshoe Island then.

Q. That is the island that is indicated here on this map opposite the word "Slip"?

A. Yes; I think that's it.

Q. And you mean you went northerly of that island?

A. Yes, sir.

Q. And then what course did you take?

A. Turned down here (indicating), and I think it was southwest or little in that direction; of course you keep turning right along all the way from northwest direction.

Q. It wasn't a straight course?

A. No, sir. It was right at this place was weeds just all kind, on both sides. I think there was two rows of these weeds or rushes or whatever you call them; we ran on the inside of the second row of rushes and we turned until we got up to a point here I think they call it Squaw Point. I can't tell it on this map.

Q. Locate yourself. There is Big Island (indicating). Do you understand this map by looking at it?

A. I have got an idea of the map all right. I know we ran inside of that island.

Q. By "inside" you mean north?

A. North.

Mr. Fryberger: Was it called Pie Island?

The Witness: Snowshoe Island then; I don't know what
808 they call it now.

By Mr. Gard:

Q. Above that when you were going around Big Island what course did you take?

A. I just forget the course we took around. Of course, you are turning nearly all the time until you pass here until you get down to where the old brickyard here is, or this Indian Point. I think that is it right there (indicating), if I understand where the map is.

And then we went inside of this here what we used to call Fishermen's Island; I don't know what they call it now.

Q. That is what is called Tollis Island?

A. Yes, sir.

Q. You went northerly of that island?

A. Yes, sir.

Q. And around on the northerly channel that is north of Big Island?

A. Yes, sir. We followed close to the land on the Minnesota side here north of this Tollis Island and past what we used to call the brickyard then; and along following that shore until we got up to Spirit Lake landing, wherever that is.

Q. Here is Spirit Lake and there is Spirit Island.

A. Yes; but there was a town they called Spirit Lake, kind of a little village. There was a hotel there. We used to stop and get our meals there sometimes at this landing. It was down from Spirit Lake quite a ways. So we followed right along close to the shore till we got up above this landing at Spirit Lake and then we turned southeast, or, east, I should say—in an easterly direction, anyway.

Q. You see a line marked on the map, or strip colored yellowish, don't you?

A. Yes, sir, this line here (indicating).

809 Q. What would you say about that representing your course after you went past Grassy Point; how did you run with reference to that?

A. Well, that gives a fairly good direction, I think, of what we used to run.

Q. That line marked yellow on this map?

A. Yes, sir.

Q. On Exhibit 29, that is Wisconsin's Exhibit 29?

A. Yes, sir.

Q. Now, you said you went close to that shore. You mean the Minnesota shore, do you?

A. Yes, sir.

Q. You were pointing to the Minnesota shore when you said "that shore"?

A. Yes. I know when we turned here from that old blast furnace here around this point there was a straight course here down to what they called the brick yard; I don't know what they call it now. This is the island here. We was north of that island. There was a row of rushes. There was two rows opposite this Blast Furnace. We used to run inside of the second row.

Q. You mean northerly?

A. Northerly, yes.

Q. Now, were there two courses that boats took above Grassy Point going up the river?

A. There was two courses; but one was for, as we used to term it, was the shortcut for shallow water boats, for shallow draft boats.

Q. And in speaking of the two courses how did you designate them?

A. Why, among sailors used to call it the cut-off and the main

channel. They went up the channel, the main channel, towards the Blast Furnace. They went up the main channel.

810 Q. The main channel and the cut-off?

A. The cut-off, yes, sir.

Q. And the light draft boats you say went up the cut-off?

A. Yes, sir.

Q. Did you ever take the cut-off channel?

A. No, sir; never went through the cut-off.

Q. Now then, you always went, then, the course that was called what?

A. It was called the main channel then.

Q. And was that course generally known as the main channel as distinguished from the cut-off?

A. Yes, sir.

Q. What other navigation have you done on the St. Louis River above Grassy Point?

A. Why, I sailed the Tug Mystic for five years, and we used to run up there quite often.

Q. What five years did you sail the Tug Mystic?

A. Why, it was from 1896 to 1900.

Q. Six years, was it?

A. It was from the year 1906, five years.

Q. You mean 1896 to 1900?

A. 1900.

Q. Inclusive?

A. Included, yes, sir.

Q. What were you doing with the tug Mystic? What took you up the river at that time?

A. Well, we towed logs up there and boom sticks mostly.

Q. How often did you go up the river with the Tug Mystic?

A. I couldn't say exactly; but it was sometimes we went up two or three times a week and then again wouldn't go only once or twice a month.

811 Q. Who were you working for when you were operating the Tug Mystic?

A. Captain Stevens.

Q. What was your position on the tug Mystic?

A. Captain of her.

Q. All of the time during these five years?

A. Yes, sir.

Q. And what course did you take after you passed Grassy Point on the Tug Mystic?

A. I used to take the same course I did with the Barker.

Q. Did you ever take the cross-cut with the Tug Mystic?

A. No, sir.

Q. The cut-off channel, I mean?

A. No, sir; I never tried it.

Q. How much water did the Tug Mystic draw?

A. She drawed ten to ten and a half feet.

Q. How much did the Barker draw?

A. She drawed seven feet four when she was light.

Q. And when she was loaded what did she draw?
A. She might draw seven to ten or eight feet.
Q. What would you say as to the route that you took above Grassy Point that you designate the main channel, being the route that boats other than light draft boats usually took in going up the river?
A. Yes, sir; that was the channel we always took with boat of any draft.
Q. You didn't navigate after 1900, did you?
A. No, sir, not up the river.

812 Cross-examination.

By Mr. Fryberger:

Q. Mr. Lachapelle, you live in Ashland?
A. Yes, sir.
Q. How long have you been a resident of Wisconsin?
A. Most of my life.
Q. Were you born here?
A. Born in Michigan.
Q. Lived nearly all your life in Wisconsin?
A. Yes, sir.
Q. Who did you see first with reference to this matter?
A. I think it was Mr. Bardon.
Q. Mr. John Bardon?
A. Yes, sir.
Q. He came down to Ashland to round up some witnesses, did he?
A. I don't know what he was there for.
Q. Did he see several of you men down there about this matter?
A. He was talking to me on the ferry boat. I run a ferry boat down there.
Q. How long ago?
A. Oh, a few weeks ago.
Q. Did he tell you what the dispute was about?
A. No, sir; he didn't say much about it.
Q. Well, he told you what they wanted you for up here, didn't he?
A. He didn't say he wanted me.
Q. He didn't say he wanted you?
A. No, sir.
Q. Didn't he tell you it was a suit between Minnesota and Wisconsin over the boundary?
A. He asked me if I knew anything about the channel up the river.
Q. You found out on what side he was, didn't you?
A. No, sir, I didn't.
813 Q. Did you think he was for Minnesota?
A. I didn't know where he was for.
Q. How long have you known John Bardon?
A. I know him about 40 or 45 years.
Q. On pretty friendly terms with John Bardon?
A. Yes, sir.

Q. You knew old Tom Bardon, I presume, in Ashland?
A. Yes, sir.
Q. And Jim Bardon of Superior?
A. Yes, sir.
Q. Known them all a long time?
A. Yes, sir.
Q. You know a great many people in Superior?
A. Know a few; I used to live here.
Q. How long did you live here?
A. About twelve years.
Q. How long have you lived in Ashland the last time?
A. I have been down to Ashland about seven years.
Q. Now, did you go up the river Sunday?
A. Yes, sir.
Q. Wisconsin had a party of about thirty-two on the boat, didn't they?
A. I didn't count them. They was about that many.
Q. A lot of them were friends and acquaintances?
A. Yes, sir.
Q. And went up for the purpose of looking over this river so you could testify, didn't you?
A. Why, I don't know as it was exactly to testify, but we went to look at the new docks.
Q. What new docks?
A. Coal-docks. I haven't been up the river for years.
Q. What coal-docks?
A. I forget the name of the coal-docks now. It's up at the other end of Grassy Point.
Q. How far up did you go on this trip?
814 A. We went around Big Island.
Q. What boat did you have?
A. I forget the name of the boat now. Jeanette, I think.
Q. Jeanette?
A. I think that is the name of it.
Q. Have refreshments on board; cigars?
A. They had cigars, yes, sir.
Q. You talked over these channels and lines, did you?
A. Yes, sir; we talked about the old channel and the new one.
Q. Refreshing your recollection about where you used to go, did you?
A. Yes, sir.
Q. And I suppose practically all of you agreed on where you used to run, didn't you?
A. Yes, sir, I knew where we used to run.
Q. I say, you practically all agreed; you seemed to be unanimous on where you used to run, didn't you, when you got through with that trip?
A. Yes, sir.
Q. Who seemed to be in charge of the party?
A. I don't know as anybody was in charge of the party.
Q. The boat didn't just start off itself and go up the river, did it?

A. The man that had the boat was the one that run it.
Q. Who asked you to go up the river?
A. Harry Peabody asked me first.
Q. Who asked you second?
A. Mr. Bardon.
Q. Mr. John Bardon?
A. Yes, sir.
Q. Did he go along?
A. He was along, yes, sir.

Q. When was it you say that you had anything to do with
815 the Steamer Barker on this St. Louis River or bay?

A. That was 1892.

Q. And I understood that the way you could tell was because you looked up some old records which you had and found it was the year before the World's Fair at Chicago?
A. Yes, sir.
Q. You had no independent recollection of it at all?
A. Why, I had some, certainly.
Q. Now, was that your first experience in going up that river, 1892?
A. Yes, sir.
Q. You started in, you say, as captain of the Barker?
A. Yes, sir.
Q. Was that the boat that used to be owned by Mr. John Howard and Con Flynn?
A. I know Mr. Flynn had an interest in it. I never knew Mr. Howard had.
Q. Didn't he run it for years, he and Flynn together, both working on it? You don't know yourself?
A. They didn't own her when I was on her.
Q. I mean prior to that time.
A. Yes, sir.
Q. You didn't run on it at that time?
A. No, sir.
Q. When you went up on the boat Sunday did you have some maps along?
A. I didn't see any maps, no, sir.
Q. How long did you run on this Barker?
A. That one season.
Q. You started how early.
A. I just don't know what time I started, but it was in the spring of the year.
Q. It was running on excursions, wasn't it?
A. Yes, sir.
Q. Only?
A. That is all.

Q. You didn't start till about June, did you, fore part of
816 June?

A. That's up the river; we were working here before we started up the river, you know.

Q. Well, I mean when you started to go up the river. It wasn't before the first of June, was it?

A. I wouldn't swear to the time.

Q. And you don't know when you stopped running as captain?

A. It was some time in July.

Q. When you stopped running as Captain?

A. Yes, sir.

Q. Then you had a very short run as captain up that river?

A. Yes. It was only a few months.

Q. Then what time did you quit running up the river that year?

A. I think it was some time in September.

Q. So it was a very short run?

A. Yes, sir.

Q. That is the only thing you had to do with navigating that river until 1896; is that right?

A. Yes, sir, that's right.

Q. And in 1896 you began to run the Tug Mystic?

A. Yes, sir.

Q. Now, with reference to the Barker, was that built over in any way after Smith & Morrow got hold of it?

A. I don't know whether she was changed after that Smith and Morrow owned her. She was changed after Smith and Morrow owned her.

Q. Prior to the time they bought it she wasn't changed any that you know of.

A. Not that I know of.

Q. That boat never drew over six feet?

A. She drew seven foot four.

Q. How do you know she did?

A. Had a record of it.

Q. You never measured it, did you?

A. Yes, sir.

817 Q. You measured it, did you?

A. Yes, sir.

Q. What did you measure it for?

A. Why, there was one time she was on the dry dock and wanted to find out what water she drew.

Q. You measured it at the dry docks. Where was that?

A. At the Marine Iron Works.

Q. After you started to run your tug, the Mystic, that was after the dredging had been done in 1893, wasn't it, or do you know anything about when the dredging was done?

A. I don't know. I wasn't running the river when the dredging was done.

Q. You didn't know there was any dredging done?

A. No, sir.

Q. You didn't know there was any dredging done prior to the time they made the channel in 1900, did you?

A. I am not sure that I did.

Q. Never heard that that you recollect of?

A. No, sir.

Q. So you didn't know that in 1893 they dredged up above Grassy Point?

A. No, sir.

Q. Now, when you were running that little boat Barker, the one that had been bought from John Howard and Con Flynn, there was never a day when you ran that that you couldn't go up the south channel with that boat, was there?

A. I never thought there was any boat of any draft to go the south channel.

Q. You mean to say that the Barker couldn't go the south channel in 1892?

A. I wouldn't say she couldn't go.

Q. But you never tried it?

A. No, sir.

Q. How many feet did you go from this little island that you call Snowshoe Island that you said you went to the north of?

818 How far did you miss it?

A. It was close to the island.

Q. You just missed the island, didn't you?

A. We wasn't a great ways from the island.

Q. Well, about how many feet was it; 75 or a hundred?

A. Why, it was in the neighborhood—I wouldn't state exactly the number of feet.

Q. You practically followed the same course all the time that you were running the boat in 1892?

A. Yes, sir.

Q. Who else was with you on that boat; anyone else here in the room?

A. Yes, sir.

Q. Who?

A. Captain Smith.

Q. What was he doing?

A. He was firing on the boat first.

Q. What is his first name?

A. Ed, Captain Ed Smith.

Q. He is now running the America, isn't he?

A. Yes, sir.

Q. And he was firing on that old boat, was he?

A. Yes, sir.

Q. How long did he fire on that boat?

A. Up until this change was made in July that I spoke about.

Q. Then what did he do?

A. He took the boat to sail. He was captain.

Q. You think you ran fully 75 to a hundred feet north of this island, do you? It was fully that much?

A. Well, it was north of the island; I wouldn't state the number of feet. It is in that neighborhood.

Q. Yes, it was about that?

A. Yes, sir.

Q. Now, as a matter of fact, you don't know whether there had

been some dredging above Rice's point at the time you ran
819 this Barker, do you, this little excursion boat?

A. Above Rice's Point?

Q. Above Grassy Point.

A. There was no dredging that I know of above that point.

Q. I say, you don't know anything about it?

A. No, sir.

Q. Well, as a matter of fact, in 1896, when you ran the Tug Mystic, you never knew of any dredging then above Grassy Point, did you?

A. No.

Q. And if dredging was done you didn't know it; isn't that true?

A. There was none done there that I know of.

Q. You never heard of any being done, did you?

A. No, sir, not above Grassy Point.

Q. You said that this map, Exhibit 29, you didn't understand that very well, is that true?

A. Why, not very well. It looked odd to me at first.

Q. Looked odd to you?

A. The directions are about the same, as near as I can get to it on the map.

Q. But the distance is what bothered you?

A. Yes, sir.

Q. Well, now, how many ranges did you have above Grassy Point?

A. Why, the range I used to go on, there was one on this end and the gap in the hill on the other end, and that smoke-stack, for steering above Grassy Point when we made that turn, nor'west.

Q. That makes three ranges?

A. That's two ranges.

Q. Did you have any more?

A. When we got up to the Blast Furnace when you are rounding there, you couldn't get a range very well,—used to use them Islands; and the weeds there alongside.

820 Q. Did you know of anybody staking out the channel above Grassy Point before 1893?

A. No, sir; there was no——

Q. Never heard of that?

A. No, sir; no stakes that I ever seen.

Q. Are you real sure that you sailed there at all until after 1893?

A. Yes, sir; I was there in 1892.

Q. Because that was the year before the World's Fair?

A. Yes, sir.

Q. And you wouldn't have remembered that if you hadn't had some records; is that it?

A. Oh, I would remember it, yes, sir.

Q. I think you said you had some records, is the reason you remembered?

A. Yes, sir, I did.

Q. Well, then, it was the records that caused you to remember?

A. Yes, sir.

Redirect examination.

By Mr. Gard:

Q. How close to the Minnesota shore did you run in the vicinity of that Snowshoe Island?

A. We were pretty close to the Minnesota side all the way along.

Q. How close to it would you say? Would you say you were closer than you were to the island, or not?

A. Yes, sir, we were, I think, a little closer the main shore.

Q. Closer to the Minnesota shore than you were to Snowshoe Island?

A. Yes, sir.

Q. Now, when you got past Grassy Point you took the mud bank on the Wisconsin shore for your range to go to the north of
821 the island, didn't you?

A. Up near the old Blast Furnace, second mud bank.

Recross-examination.

By Mr. Fryberger:

Q. And that took you about 75 or a hundred feet from the island, didn't it?

A. Not on that one course. I think we curved before we got to the island.

Q. And then you went within 75 or a hundred feet, you don't want to change that, do you?

A. No, sir.

Q. And what other ranges did you have besides that smoke-stack, when you got further up?

A. Why, we turned somewhere near the Blast Furnace there and this Squaw Point that ran up just outside of what they call Squaw Point.

Q. You have given me the mud bank and have given me two other ranges. I want you to give the rest of your ranges till you get up towards Big Island?

A. Well, sir, you had no regular ranges after we passed this Blast Furnace. That was about the only range we had, because — had a long run there.

Q. There is ranges right along all the way up?

A. Yes, sir. We used to follow that main land right close to —; there was good water all the way up there.

Q. Haven't you forgotten the ranges you used?

A. No, sir.

Q. Didn't have any ranges at all?

A. Didn't forget them.

Q. You never were out of sight of land, were you?

A. No, sir.

Q. Plenty of ranges you could get; isn't that so?

A. Yes, sir.

822 Q. But you didn't use any ranges?

A. As a rule, most of the weeds was up on both sides of the river. You could follow them all the way along.

Q. Weeds didn't come up till way in the middle of the summer, above the water?

A. No.

Q. What did you do before the weeds came up?

A. That was the only place we needed ranges very bad was just going from the end of Grassy Point to the turn at the Blast Furnace.

Redirect examination.

By Mr. Gard:

Q. Mr. Lachapelle, were you curving most all of the time or were you running straight after you rounded Grassy Point?

A. We ran straight for a ways on them ranges that we just spoke about, and then you were curving most of the time.

Q. Below the Blast Furnace were you curving?

A. Yes, sir.

823 EDWARD SMITH was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Hudson:

Q. Captain, what is your first name?

A. Edward.

Q. Where do you live?

A. Duluth.

Q. How long have you lived in Duluth?

A. Ever since 1883.

Q. Since 1883?

A. Yes, sir.

Q. Where did you live prior to that time?

A. Superior.

Q. How long had you lived there?

A. Well, sir, I was born in Superior, but I was away five years out of that.

Q. What is your business now?

A. Sailing.

Q. In what capacity?

A. Master of a steamer.

Q. What steamer?

A. Steamer America.

Q. You are a captain of the America, are you?

A. Yes, sir.

Q. You have a marine license, have you, for sailing?

A. Yes, sir.

Q. How long have you had a marine license?

A. Since 1892.

Q. Have you been engaged in sailing and operating boats since that time?

A. Yes, sir.

Q. All the time?

A. All the time.

Q. Prior to that time what did you do?

A. Dredging, working on the dredge, tugs and so forth.

Q. What were your particular duties in working on the tugs?

A. I done most anything on dredges, crane, ran machin-
824 ery, as you call it captain on the scow, all the work that was required in the dredging.

Q. For how long a time?

A. Nine seasons I worked.

Q. Nine seasons?

A. Nine seasons.

Q. That would bring it from about 1883, would it?

A. I went to work in '79 for the company.

Q. For what company?

A. Williams & Upham Company.

Q. That was a well-known firm in Duluth, was it?

A. Yes, sir.

Q. Where did you operate the boats?

A. Down to the Soo, all along the shore up here, Ontonogan, L'Anse Bay; also in Port Arthur.

Q. When did you commence to operate boats here at Superior and Duluth harbor?

A. With the dredges, you mean.

Q. Well, in handling dredges and tug boats or working on them?

A. '79 I started.

Q. And for about how many years were you operating these boats on the harbor here in Duluth and in the vicinity of Duluth?

A. Since that time.

Q. Yes; since '79?

A. Well, I have been on the water ever since; different boats, different tugs.

Q. Here in Duluth?

A. Here in Duluth, Soo, L'Anse Bay, Port Arthur.

Q. How much of the time did you work here in Duluth?

A. Ever since 1892 I have been here sailing; hail from Duluth.

Q. That is continuously since that time?

A. Hailed from Duluth.

825 Q. What I want to get at, Mr. Smith, is how long before that time; that is, how much time each year before that time have you done work here? Which year were you doing work in the Duluth harbor?

A. That would be about 11 or 12 years.

Q. Well, do I understand that you worked here part of the time and then down at these other points at the Soo and Ontonogan parts of the same years?

A. We done that in one season. We left the Soo and come up here; done the work all along the shore.

Q. In one season?

A. In one season, yes.

Q. Was most of your work up here in Duluth harbor?

A. Most of the time right here in this harbor.

Q. Then you have been familiar with the waters of Duluth harbor and St. Louis Bay and river since 1879; is that what you wish to say?

A. Yes, sir.

Q. Did your duties take you up above Grassy Point any of this time?

A. Yes, sir. I was plying on a boat that just run up the river.

Q. How far?

A. Well, clear up to Fond du Lac.

Q. You say you were fireman on a boat?

A. Yes, sir.

Q. What boat was that?

A. The S. P. Barker they called it.

Q. What year was the first year that you used to run up there?

A. That's in 1889.

Q. What were you doing that year?

A. Firing.

Q. What was the boat doing?

A. She was engaged in excursion; taking out excursion parties running up the river.

Q. How many times did she go up the river that year?

A. That year, well, in three months' time we used to go up
826 twice every Sunday.

Q. Twice on every Sunday?

A. And then during the week probably once or twice.

Q. Once or twice each week?

A. Yes.

Q. Did you go up the river after that, in any year?

A. Yes. Previous to that time I went up the river.

Q. On what boat?

A. Called Rambler, Tug Rambler.

Q. What were you doing on the Tug Rambler?

A. Well, sir, I was wheeling on the tug, wheelsman.

Q. That is, you were steering the boat?

A. Yes.

Q. What year did you go up on the Tug Rambler?

A. I couldn't describe the year very much, but I could say, the time that the boom broke up to Cloquet mills, and all came down here in this bay, and we gathered the logs up the river.

Q. You were gathering the logs up the river. What did you do with the logs?

A. We towed them down here on the other side of this bay here, on what we call Rice's Point. They had a loading place in there and they sent the logs back to Cloquet. We towed them down,

Q. How long were you engaged in the business that year towing logs?

A. Oh, about two months, I guess.

Q. Two or three months?

A. Two months, about.

Q. How far up would you go to gather the logs; how far up the river?

A. We used to go as far as what they called New Duluth now. There wasn't many logs lodged up above that. They all
827 came down this way on the flats, you know.

Q. Were you at work continuously during that two or three months in towing logs? Was that the chief business of the boat during that period?

A. Yes, sir.

Q. Now was that in 1888 or 1889; can you fix that by years any closer than you have?

A. Well, I couldn't say exactly. It's quite a while ago. I don't remember the year exactly. Somewheres in 1888 or spring of '88 or '89; I don't know which. It was in May month.

Q. That was the time that there was a great flood, is it, and the dam at Cloquet broke and the logs came down?

A. The log boom broke.

Q. Do you know whose logs they were?

A. Why, no, I couldn't say that; probably Nelson Lumber Company.

Q. You don't remember whose logs they were?

A. Nelson Lumber Company.

Q. Who were you working for then?

A. Fellow by the name of White.

Q. He was a general foreman for the lumber company up there? Now, have you gone up the river many times since that?

A. Not very much since that.

Q. Well, what years have you gone up the most?

A. In 1893, I guess.

Q. 1893.

A. Yes.

Q. That was when you were captain?

A. I was captain then.

Q. On which boat was that?

A. Steamer Hunter.

828 Q. How many times did you go up that year on the Hunter?

A. A couple of times I remember.

Q. What was that boat doing?

A. We was running from Duluth to Ashland.

Q. When it went up the river?

A. Well, it was chartered, you know, by parties, to go up the river; chartered from Duluth.

Q. For excursion parties?

A. For excursion parties.

Q. When you went up the river in 1888 or '9, when you were

on the Rambler, what course did you take going out the river, say beyond the gateway here?

A. Gateway here. Well, we didn't have any ranges nowheres; but leave from the booms here we followed about the center of the bay till we got on the east side of Grassy Point where there is opening, rushes, between there, got around Grassy Point on the west side and then come up northerly direction parallel with Grassy Point.

Q. Did you have any particular range point there?

A. We had a smoke-stack just then on the main shore where we were heading.

Q. Do you know that smoke-stack?

A. I couldn't describe what smoke-stack that would be, but we would get around this Grassy Point and then we land up with the smoke-stack.

Q. How far would you go?

A. Oh, we would go within a half a mile, quarter mile, from the main shore, and then swing off.

Q. In what direction would you swing off?

A. Well, it's gradual direction, and then we go over a narrow place almost swing southerly direction till we get over the crossing and then we went up westerly direction.

829 Q. What distance would you be from the Minnesota shore when you went up westerly; were you nearer the Minnesota shore than the Wisconsin shore?

A. I should judge from the Minnesota shore about 1,500 feet or couple thousand feet; something of that sort.

Q. Do you know how far you were from the Wisconsin shore?

A. Well, Wisconsin shore, I don't know. That is the main shore, body of the dry land, was quite a ways—I dare say a mile and a half.

Q. Was there any islands that you can locate your course by after making the curve to the south that you have described, through this narrow bar?

A. Yes; there is a kind of a dry bog on the left side, going out. It extends, I dare say, about three-quarters of a mile, I guess—willows, black willows.

Q. Do you know where the Spirit Lake dock is or Spirit Lake landing?

A. Yes, sir.

Q. Now, what direction would you take after leaving this dry bog, as you describe it, with reference to that Spirit Lake landing?

A. About southwest direction—westerly direction.

Q. Do you know where the brickyard was that used to be located up there?

A. Yes, sir.

Q. How near to that brickyard?

A. Oh, pretty close, I dare say, to 800 feet, probably.

Q. Was there a little island nearly opposite that brickyard?

A. A little above that I think there is a kind of a dry bog there next to the Minnesota shore there from the main channel.

Q. There is a little dry bog there too, is there?

A. Yes; not what you call a dry bog, but shallow place,
830 you know.

Q. Do you remember whether there was an island with a little building on it up there?

A. No.

Q. Where would you go with reference to Spirit Lake landing; did you go near that landing or far from it when you were going up the river?

A. Go up the river till you get up to what you call that station down there two miles below Fond du Lac. Sometimes we used to take people up there.

Q. You didn't understand my question. I wanted to know whether or not you stopped at Spirit Lake landing in going up?

A. Yes.

Q. Or went near that in going up?

A. There was a little dock in there. There was a little dock sticking out.

Q. You went near that dock?

A. Yes. We used to stop there.

Q. After leaving that dock and going up the river what direction did you take with reference to the Big Island?

A. We swung right around south direction—east—southeast.

Q. Did you go over near to the shore of the Big Island in going up?

A. Going up, yes. About same distance, Minnesota; on that side we did, on the Big Island.

Q. That is, at that point the channel narrowed down and there were banks both sides; then from there you just followed the main channel right up the river?

A. Main channel right up through.

Q. What draft of water or what water did this boat Rambler draw, about?

A. Well, sir, I couldn't describe the depth of water she drew but I dare say she drew ten feet of water.

831 Q. Did you in going up the river with the Rambler after, take it through what is known as the short-cut?

A. We couldn't do it.

Q. You couldn't go through the short-cut with the Rambler?

A. No.

Q. Did you always in going up the river take this course that you have described?

A. Yes, sir, we always do that coming down; going both ways.

Q. And that was because you couldn't go through the short-cut with the boats that you were on?

A. Yes, that was the cause.

Q. Did you ever sail a boat or take a boat up the short-cut?

A. No, not that I remember; but I have been on a boat that went through the short-cut.

Q. I will ask you if that boat only drew—or was a shallow boat—drew but a few feet of water?

A. Well, been on the Barker. She went through the short-cut.

Q. But not when you were captain?

A. No.

Q. When you were towing logs down the river what course did you take in towing them down there, the deep water west and north of the island or the short-cut south of the island?

A. We took the south side of the island, main island, after getting out of the narrow river, the narrow channel of the river there.

Q. I mean in rafting logs down the river from New Duluth, which course did you take in coming down the river; was it the same course——

A. The same course that we took going up.

Q. That is the same course you have described?

A. Described, yes, sir; all the same route.

832 Q. Was that between the Big Island and the Minnesota shore?

A. Yes, sir.

Q. Captain Smith, I show you Wisconsin's Exhibit 45, which is the so-called Meade map of 1861 and will ask you to examine that map and get your location upon the map and then point out the course that you took up the river from we will say this gateway as you were describing the course that you took up the river?

A. There, about here. That is where the location where they had a loading place where they reload these logs.

Q. You are pointing to the west side of Rice's Point about halfway down?

A. Yes, about there somewhere; and we go up the center of the bay here till we reach these rushes, both sides here, and then we follow them.

Q. That is, you followed between the rushes?

A. Between the rushes, right there; and this is the end there, about—somewhere used to be a bog sticking out.

Q. You are pointing at the south end of Grassy Point?

A. Used to be a bog here right out here somewheres; go out there and we got around this bog here and then swung somewheres in that direction on the main shore; there was a smoke-stack. Then there's rushes started in here somewheres, used to be, and then great big rushes around in here.

Q. These rushes, that doesn't mean anything. Can't you describe where these rushes are with reference to that channel of water?

A. I was going to say we got in between here and the Grassy Point and was outside the rushes, and there's another rushes

833 sticking up here, and then we go down here and get around here and swing; these rushes stick right in there, come down here, and then pretty well swing up.

Q. You are swinging in a southwesterly direction, aren't you?

A. Yes; across here almost an angle, and then there is what I described as little Willow Island, starts in this way, black alders; then we are on the north side of this little island towards the main shore here, and the brickyard stands right in here somewheres; I

think, if I remember right in here; we go pretty close to that brickyard here.

Q. That's on the Minnesota side?

A. And then swing a little bit to the westward; then we come to, I dare say, about where the railroad track used to run right down here, I dare say, about here somewhere.

Q. You were pointing now to the little dock, were you, the Spirit Lake dock?

A. Somewheres around there; I couldn't describe it exactly, the location; but the railroad track used to run across this bay here; there was a dock here; then swing around here southeasterly direction up this way. This is Big Island, follow the main shore; high banks right along here on the Wisconsin side; high banks here. This is low here, very low here, almost water; followed right along here up this way; swing here south; and we used to go on the south side of this little island here, what they call Bear Island.

Q. This is up at New Duluth, is it, up at New Duluth?

A. Yes, south side of it.

Q. Now, Captain Smith, I will ask you if you have pointed
834 out what is a channel as shown on this Meade map, a channel of water that is the deepest water between the Wisconsin shore and the Minnesota shore?

Mr. Fryberger: I object to that as leading, and furthermore, not the fact.

Mr. Hudson: Very well. I will withdraw the question.

The Commissioner: Let me make a suggestion that you have the witness take a pencil and mark out his direction on the map.

Mr. Hudson: We have another map that is marked that same way, and if we could have it described in the record I think that would be better than to have so many Meade maps. I think that would be preferable. The fact is that the witness has described the channel following around near the west line of Grassy Point.

Mr. Fryberger: Sometimes he did and sometimes he didn't.

Q. I will have him go over it again, if you have any objection to that. We will see that it is satisfactory. We want to know where it is, and I think we will have to locate the points as we go along in going up the river. I will ask you, Captain Smith, to go over that route again that you took, commencing at the south end of Grassy Point, and as you go along I wish you would describe, for instance, whether you went between the two banks of weeds and rushes that you mentioned, or not?

A. Well, I can do that probably, but it's quite a while since I have been up there. I wouldn't know exactly how they lay, these
835 lines, but anyhow, in my young days there was one of these little islands here. I used to walk around there barefooted. My grandparents used to make sugar up here in the olden days.

Q. Where did you walk barefooted; can you locate the island?

A. Right here; this one here.

Q. That island there?
A. Yes. Not exactly dry.
Q. Well, was it the one that was north of the channel?
A. Yes, next to the Minnesota shore there right abreast of Millford there. This is Millford. There used to be an old saw-mill there in olden days, a long time ago.
Q. Is that island you were pointing out the shape of a triangle with a sharp point to the west?
A. All rushes here; but there's a place here where we used to walk around barefooted, but anyhow, we start from Grassy Point; this is all bog here in olden days and the rushes started in here. This is the end of these rushes here. And about here, abreast of Millford Point here we will say; and then these rushes didn't extend very far, just a little ways; and then we go between these rushes and the heavy ones here.

Mr. Hudson: The witness is pointing to the channel of water that is parallel with Grassy Point or lies west.
Mr. Fryberger: He didn't point to that except to show that the rushes were in the channel. He didn't say that he went through that channel at all. He went south of that channel. That's what he did.
Mr. Hudson: I don't think he did.
Mr. Gard: He hasn't said he did.
Mr. Hudson: There's no rushes shown on the map but there is shallow water that he says there were rushes going out in.
836 Mr. Bailey: Yes, and he says he went between the lines of rushes.

Q. Was the water deep at the point you went between the rushes?
A. The boat we was on, it floated. Water was deep enough to float.
Q. Then after you got up here you said you had to cross toward a smoke-stack?
A. Yes; in here; there was a smoke-stack here. I don't remember what smoke-stack that would have been—Blast Furnace; something of that sort, I guess.
Q. And then after you got up near the Minnesota shore——
A. This little dock here, small dock; then we swung around here.
Q. Swung around in what direction?
A. Westerly direction about.
Q. How far would you go in that direction?
A. Well, I know, of course, we didn't leave those rushes till I don't know—anyhow, we followed the weeds part of the channel, you might call it; then we swung around and got across here; then we go up here, be pretty close here to the main shore.
Q. Now at that time was there an island right at that point?
A. An island on the south side here, yes, sir.
Q. Is that island known as Tollis island?
A. I couldn't describe it.
Q. But there was an island on the south side?
A. Yes.
Q. Then from there where did you go?

A. Followed these w.ds part of the water, followed up to the Spirit Lake.

837 Mr. Hudson: Witness is pointing at the channel of water halfway between the island and the Minnesota shore, about halfway.

Mr. Fryberger: Big Island. I will agree with you that that is just what he did there, Mr. Hudson.

Q. Then what direction did you take from there?

A. From the main shore was what we call the Spirit Lake dock; swing right around on the southeast river, follow the current.

Q. Southeast?

A. Southeast direction, about.

Q. Toward what object? Toward what natural object, either island or land?

A. Land on both sides of us here.

Q. Toward Big Island, was it?

A. Yes, sir, towards what we used to call Heugier Island. This is the island here (indicating).

Q. Did that channel that you followed have a current in it?

A. Yes, sir.

Q. And was the current swiftest in the course that you took up the river?

A. Sir?

Q. Was the current swiftest?

A. Where it is narrow, it is pretty swift; but where it is flattened out, of course there wasn't so much, but still you can tell where the main river runs.

Q. Do you know where the mouth of the St. Louis River is?

A. The mouth?

Q. Yes.

A. Well——

Mr. Fryberger: He asks if you know. That is, he wanted to know, Yes or No.

A. Well, yes, down here between Wisconsin Point and Minnesota Point.

838 Q. Is that generally known by captains that you know, as the mouth of St. Louis River?

Mr. Bailey: Objected to as immaterial and irrelevant.

The Commissioner: He may answer if he knows.

A. Well, as far as I ever heard, all known by the captains.

Q. That is, captains generally——

A. Yes.

Q. Called that the mouth of the St. Louis River. Now, in going up the river did you take what is the main channel of the river?

Mr. Fryberger: Objected to as calling for a mere conclusion.

A. Yes, we took the main channel; we used the main channel.

Q. And why did you use the main channel?

A. Well, that is the deepest for the boats; we used to follow so that we can get up the river.
Q. Was it called the main channel?
A. Yes, sir, always known, called main channel.

Re-cross-examination.

By Mr. Bailey:

Q. Captain Smith, you say you were born in Superior?
A. Yes, sir.
Q. You are of mixed blood, Chippewa and White?
A. Yes, sir.
Q. You never took any soundings in the bays or the river, did you?
A. Yes, sir. I helped sounding in the bay.
Q. You what?
A. I helped sounding in the bay.
Q. Down here between the Grassy Point and Connors Point?
A. From this bay, clear up to Fond du Lac.
839 Q. Who did you help?
A. By gosh, I don't know what the name of it. The "main guy," Silvey, he's drowned now on the Titanic; he's our boss.
Q. You took the main channel after you got past the point Mr. Lachapelle has described?
A. Yes, sir.
Q. And substantially the same course?
A. Yes, sir.

840 Received August 14, 1917. D. E. Roberts, Commissioner.

SUPERIOR, WIS., August 11, 1917—10:00 a. m.

The Commissioner: I want to call your attention to one thing that while the powers of this commissioner are very limited, it is the duty of the commissioner to see that the evidence is properly taken. The evidence of the witness who was last on the stand is almost unintelligible, by reason of lack of reference to it on the map, unless you can stipulate that what he was trying to do was to describe the route on the north and west of Big Island. I would almost feel inclined to certify that that is what he was trying to do. I want to caution you in getting the testimony of these illiterate witnesses and others to have what they are testifying to appear in the record.

Mr. Fryberger: Do I understand the commissioner to say that he will certify what any witness intended to do?

The Commissioner: Not at all.

Mr. Fryberger: I understood you to say that.

The Commissioner: I am speaking of this last witness; that when his testimony is written out it becomes almost unintelligible by reason of lack of reference to the map that he was referring to. I want to caution you——

Mr. Fryberger: The point was that he didn't describe the channel that they wanted him to at all, and we followed his pencil and it was just as he said.

Mr. Bailey: I think his testimony was just as intelligible as he could make it. Furthermore, the counsel on the other side
841 when we were examining witnesses, very strenuously objected to any marking on the map.

Mr. Gard: It seems to me that there has been an attempt on the part of the counsel, which I am very sorry to see, to miscontrue what that witness actually traced on the map; and I was very sorry to see it. I saw that witness and he didn't testify very intelligibly so it can be read with any intelligence, but anybody who stood there and saw him running the pencil knows what he meant. Now I appreciate the point that the Court makes. He was Mr. Hudson's witness and I don't want to make any stipulation in regard to what he testified to, but I know and saw where he ran the pencil.

Mr. Fryberger: Do you want to say that when you make the statement as to where he ran the pencil nobody else has any right to make a statement as to where he ran the pencil?

Mr. Gard: I say that you have no right to say contrary to what he did when he used the pencil.

The Commissioner: Sitting here and watching the witness moving his pencil from place to place on the map the Court could see what he was intending to describe, but it was almost impossible for a person who hadn't the opportunity of seeing, to comprehend what the witness was trying to testify to. Perhaps we will say no more about it except that when the next witness comes on you will take more care to make the record more intelligible to anybody that hasn't the benefit of sight.

842 Mr. Fryberger: I think the record should speak for itself. I don't think a statement of that kind is proper on the record.

Mr. Powell: We offer in evidence Wisconsin's Exhibits 46, 46-A, 46-B, 46-C, and 46-D.

The Commissioner: Exhibits are received.

JOHN SHEA was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Captain Shea?
A. Duluth.
Q. How long have you lived in Duluth?
A. I claim it my home for about 35 years. I have got a home there now. The last ten year I built a home of my own and lived there.
Q. Where did you live before coming to Duluth?
A. L'Anse, Michigan.
Q. What is your business, Captain?
A. Boatman, boat owner.

Q. What boats do you own?
A. I own at the present time the Tug Crosby.
Q. What boats have you owned?
A. I have owned the Odin, Richardson, J. M. Puller, the Elgin, and the Crosby I own at the present time.
Q. What kind of boats are these?
A. They were all tug boats but two; one was a team ferry
843 and the other was a schooner or a barge.
Q. Have you navigated the waters, Captain, yourself?
A. Yes, sir, for 43 seasons without missing a season.
Q. What waters have you navigated?
A. Well, the Great Lakes most of them; Lake Superior most of the time.
Q. Do you hold a pilot's license?
A. Master's and pilot's license.
Q. How long have you held such license?
A. Since '82
Q. Continuously?
A. Continuously. Well, I wouldn't say that. I believe when they were building the Canadian Pacific there was a year there I missed. I was on boats also when they were building the Canadian Pacific. I didn't renew my license. Had to renew them every year them days; now it's every five years.
Q. To what extent have you navigated the waters at the head of the lakes, Captain?
A. Well, in logging, towing, and scow towing, all such things as that, towing and running team ferry for a number of years between Duluth and Superior, before they built the bridge.
Q. To what extent have you navigated the waters of the St. Louis River?
A. Well, I have been up there many times.
Q. What year did you first navigate the waters of the St. Louis?
A. I couldn't say whether it was '87 or '88, either one of the two years.
Q. What kind of a boat did you have?
A. Tug boat.
Q. And to what extent did you navigate the waters of the St. Louis in '87 and '8?
A. Well, I went up there a number of times with boom
844 sticks and towed logs or scows, I don't remember. I do remember towing logs and boom sticks for Duncan and Brewer and others.
Q. Were you up the St. Louis frequently that year?
A. Well, I wouldn't say; a number of times, yes, but I wouldn't say how often.
Q. Now, that was your first, you say?
A. That's my first year.
Q. Well, what years after that did you navigate up the St. Louis?
A. Well, when that 90 million feet of logs came down, '89, I think.
Q. That year?
A. That year.

Q. What year do you think that was?
A. '98—'89.
Q. '89?
A. '89.
Q. To what extent were you on the river that year?
A. Well, I towed them logs that came down the river. I was the person that got all the boom sticks. They telephoned down from Thompson when the boom broke, here, to collect all boom sticks we could get here in Duluth and Superior; and I got them, and I got them together, and I tied one end, made one end fast to the pier right north of the N. P. bridge on the Duluth side at Rice's Point, and then I ran a length of the boomsticks away up the bay here and dropped anchor and waited there until the logs came down; about eleven o'clock at night when the first logs began to come.
Q. Now to what extent did you navigate above Grassy Point that year?
A. Well, we went and picked up them logs. They were scattered all over every place, through woods, swamps, out of the river.
Q. Did you just navigate up the St. Louis that year in con-
845 nection with that broken boom of logs?
A. Yes.
Q. Now, what other navigation have you done up the St. Louis River?
A. Well, scows, I think, and—I don't remember; it's so long ago; but I have been up there many times with other boats.
Q. Many times?
A. Many times with other boats.
Q. And different years?
A. Yes, with all lines, yes.
Q. Did you go wherever your business called you with your tugs?
A. Where I could go. I went to Fond du Lac, went up there up the river.
Q. Navigated up to Fond du Lac a great deal?
A. I wouldn't say—a number of times; many times, yes. The only time I was there steady was during them logs. That was steady there for maybe six weeks, two months, something like that, right along, day and night.
Q. Other years?
A. Other years very seldom; once in a while when I was doing job work, you know; I don't remember.
Q. Did you make some trips up the St. Louis most every year?
A. Oh, no; there was many years I did not.
Q. About what years, now, did you make trips up the St. Louis?
A. In '87 or '88 and '89 I sailed different tugs, and then I think '90; and then not until, that I can remember, till 1906 or '7, along there. During the time before that I have been up there. When I had the Odin I used to take what they called the sports up there to have a fight or dog fight or something. They would have it right on the boat.
Q. You navigated in 1890, you say?
A. I think in '90 and I know in 1889.

846 Q. What kind of a boat did you have in '88 or '7?
A. I had a boat drawing between six and seven feet of water.
Q. What kind of a boat did you have when you navigated in 1889?
A. Boat that drew between nine and ten feet of water.
Q. In 1890 what kind of a boat did you have?
A. I wouldn't say. I don't remember much about 1890, what boat I had then.
Q. Did you make occasional trips up the river at other times than than these times that I have mentioned?
A. Yes, besides 1888 and '89, yes.

By Mr. Fryberger:

Q. In 1889 how much did your boat draw?
A. Between nine and ten feet of water.

By Mr. Gard:

Q. Are you familiar with the course that the boats generally took in going up the St. Louis above Grassy Point?
A. When? At that time in the '80's or since that?
Q. Well, in the '80's were you familiar with the channel they took in 1880?
A. I was at that time.
Q. I mean 1888 or '89.
A. Yes, I was at that time.
Q. Did you take the channel that was usually navigated at that time?
A. Oh, I have taken both channels.
Q. Now you say both channels. What channels do you mean?
A. Well, we called it the main channel and the cut-off. I have taken both of them.
Q. What was the main channel used for?
A. For deep water, for deep draft boats.
847 Q. What was the cut-off used for?
A. Well, they could use it for lighter draft boats, if they want to, or take the main channel.
Q. Both channels were used at that time?
A. Yes. Different boats, yes.
Q. What channel did you usually take when you went up in '87 or '88 that you speak of?
A. Well, I took the cut-off.
Q. Did you always take the cut-off?
A. I did with that boat, yes.
Q. That is, in '87 or '88?
A. Yes, with the Tug Hope.
Q. And that drew how much water?
A. Between six and seven.
Q. Then when did you navigate a deeper draft boat up there?
A. In '89.

Q. And how much was that?
A. Between nine and ten feet of water.
Q. And what channel did you take when you navigated the deeper——
A. The main channel.
Q. How does the main channel run after you pass Grassy Point?
A. Well, it keeps along the Minnesota shore mostly.
Q. By which——
A. Along the Minnesota shore. It's very crooked and very——

Mr. Fryberger: What did you say about its being very crooked?
The witness: It isn't straight; it bends all along.

Q. What do you mean, short bends or just a long bend?
A. Well, not too short; it isn't straight.
Q. Was it circular, you mean?
A. Well, what we call bends in a river; it didn't run
848 straight.
Q. Could you hold on one point very long going up that channel?
A. No.
Q. Because it was circular?
A. It wasn't straight.
Q. In the summertime did the weeds mark that channel, the rushes?
A. Plainly.
Q. Were there rushes on either side of it?
A. Yes.
Q. These rushes grew up through pretty deep water, didn't they; that is, four or five feet or more?
A. Yes. They didn't grow in the channel.
Q. They didn't grow in the deep water?
A. No. They don't grow in the channel. If you see rushes, stay away.
Q. That is, you avoided the ground where the rushes grew?
A. Yes.
Q. Was there an island up about opposite the Zenith Furnace Company's property?
A. Yes, sir, there was.
Q. What do you call that island?
A. It was generally known as Snowshoe Island. That is all I ever heard.
Q. Which side of that island did you go as you went up?
A. Went on both sides of it.
Q. Which side did you go when you went the short cut?
A. I left it to starboard—hard by; that means close to.
Q. When you went the main channel which side did you leave the island?
A. In going up we left it to port.
Q. And what was your course; about where was your course between the island and the Minnesota shore?

A. I don't know any courses. I can't remember courses
849 that long.

Q. Would you say it was nearer the island or the Minnesota shore?

A. By which channel was I going?

Q. By going the main channel?

A. Closer to the Minnesota shore.

Q. Closer to the Minnesota shore than to the——

A. Than the island, Snowshoe Island.

Q. Did you mean you couldn't tell in feet or what did you mean that you said you couldn't tell, when I asked you a question; what did you mean by that?

A. You asked me about the course. I told you I couldn't tell the course. I don't know the course. I don't remember that thirty years.

Q. That is, you mean the directions, but do you know you followed what is called the main channel?

A. Yes.

Q. Was that channel that you spoke of, when you went to the right of the Snowshoe Island, generally known as the main channel of the river?

A. Yes.

Q. Was it spoken of——

A. Yes. They always used to say main channel of the cut-off.

Q. What kind of water was there in that main channel, that is as to depth?

A. Well, there was plenty of water for a nine-foot boat or ten-foot boat.

Q. And was there water to spare?

A. No. There was deep holes twenty or thirty feet deep and then it gets shallower all over that bay, many places in the bay.

Q. But in the channel you found deep water, did you?

A. Yes.

850 Q. In the cut-off what kind of water did you find?

A. Well, in the cut-off there was deep water, some places twenty feet of water, and then it ran right up shoal to about seven feet; what we called the corduroy road; there was logs lying there in the bottom and we used to strike them, and we called it the corduroy road.

Q. That was out in front of Pokegama?

A. That was right near that island, right near Snowshoe Island.

Q. To the left, as you go up, of Snowshoe Island?

A. Oh, no—Yes, Snowshoe Island was to the right, yes, going up on this cut-off.

Q. That is, it would be to your left as you went up?

A. Yes, the channel, to the left of the island, yes, port side.

Q. I show you Wisconsin's Exhibit 29, Captain, and ask you if you ever saw that before?

A. I don't know as I have seen this map before, this chart, this blue-print or whatever you call it.

Q. You see where Grassy Point is located on this map?

A. Yes, sir.
Q. You see where Big Island is located?
A. Yes, yes.
Q. And you see the Snowshoe Island?
A. Yes.
Q. Is that Snowshoe Island (indicating)?
A. Yes, yes; that is Snowshoe. That is where we used to go on what we call the cut-off down through here (indicating).
Q. That is, you are indicating now to the left of Snowshoe Island as you go up?
A. Yes, to port.
Q. Southerly——
A. We left the island to starboard, yes.
Q. As you went up the cut-off.
A. Yes.

Q. Now then, will you show me on this chart what course
851 you took when you took the main channel above Grassy Point?

A. The main channel, here is the course. This is just about; this is the main channel course.
Q. You have now pointed to the yellow shading on this map, have you not?
A. That is the main channel that we used to take with the deep draft boats, and of course, we used to take either or whichever we wanted to go with the lighter draft boats. I used to generally go up this way.
Q. That is the cut-off?
A. Yes.
Q. But with the deep draft boats you took the main channel as indicated on this map in yellow?
A. Yes, about the direction.
Q. I mean on Wisconsin's Exhibit 29; is that right; that is this map that I showed you?
A. That map there, yes. Of course we didn't go by that. We go by the Government charts, you know. It's about the same thing, though; looks to me about the same. I went up there the other day and familiarized myself, you know, to see the old channels that we used to go.
Q. That is, you went up last Monday, was it?
A. Yes, last Monday.
Q. And familiarized yourself with the changed conditions?
A. Yes, and see the old marks and this and that that I had seen. I know that is about right to the best of my judgment.
Q. Have you traveled considerably over the world, Captain?
A. Some, yes.
Q. To what extent?
A. Oh, more than half the globe. Been up Vesuvius and up Kilauea,—they claim one is opposite the other on the earth;
852 and Italy, Mexico City, across the Isthmus of Tehuantepec on horseback, in canoes and railroads all over California and Florida and New York and the Pacific Coast, all over the Pacific

Coast from Vancouver to Mexico; all along the Atlantic; up the Mississippi and out through the mouth of the Mississippi and across the Gulf of Mexico, Caribbean Sea, and Atlantic and Pacific Oceans; Columbia River and also Frazier River and different rivers; many places; been going for 35 or 40 years. Last winter I spent in Honolulu. I have been there before, 21 years ago.

Cross-examination.

By Mr. Fryberger:

Q. Well, Mr. Shea, did you sail any of these tugs on these trips that you made?

A. No, sir. I have tugged it in Puget Sound and I have tugged it in New Orleans.

Q. What did that have to do with these channels in St. Louis Bay?

A. Nothing whatever, that I know of.

Q. You weren't studying the channels in St. Louis Bay when you were off on these trips?

A. Oh, no, no.

Q. You were having a good time?

A. Yes.

Q. I am glad you did.

A. Yes, and so I am.

Q. Where are you working at the present time?

A. Ashland.

Q. What are you doing?

A. Vessel towing.

Q. Who spoke to you about this first?

A. John Crowley, of Duluth. He owns the stone quarry at Fond du Lac.

Q. Did you talk to John Bardon about it?

A. He talked to me about it, yes.

853 Q. Saw you in Ashland?

A. Yes.

Q. Did you go up with this crowd that went up?

A. I did.

Q. When was that, Sunday or Monday?

A. Monday.

Q. Thirty-two of you on board?

A. I didn't count them.

Q. You talked over——

A. We did.

Q. —the channels?

A. Yes.

Q. Practically all agreed where you went, no dispute?

A. Well, I don't know whether they all agreed.

Q. You never heard any dissent, did you, among that crowd, as to where the channels were?

A. Not that I know of. We didn't all agree, you know. There

was two or three of us or some of us fellows "this is the way I went" and "this is the way I went," yes.

Q. Do you mean to tell us that this Exhibit 29 shows the exact channel that you always took?

A. I didn't say. I said about.

Q. Looked something like it to you?

A. Yes. I said "about."

Q. Now, one witness testified yesterday that the channel he took was at least 1,500 to 2,000 feet from the Minnesota shore around that island. What do you say about that as to the channel you took?

A. I can't figure that close.

Q. You can't figure that close?

A. No.

Q. You have some idea of distance, haven't you?

A. Yes, I have.

Q. What do you think about it?

A. Well, I don't know exactly. I wouldn't say.

Q. And I think two witnesses said that when they went north of Snowshoe Island they went within about 75 to a hundred feet of that island?

A. Well, they were rattled.

854 Q. They were rattled?

A. Yes. They were rattled; because that is about where we go when we leave for the cut-off. They were mistaken, to my idea.

Q. That would be to the south of the island, wouldn't it?

A. Yes. When they took the other channel they went about that far.

Q. When you were up there Sunday and aside from the time you took the sports up to see the fights you hadn't been up there since 1890?

A. Yes, I have been up there many times. I have been up there with the tug I own now, the Crosby, and I have taken the Government channel and went between the buoys that the Government laid out for us.

Q. When did you take the sports up?

A. Oh, between 1893 and '6 or '7.

Q. And you stayed and enjoyed the fights with the rest of the sports?

A. Sure, sure.

Q. Now, take this tug that drew between nine and ten feet that you picked up the logs with; that was in 1889?

A. I think, when the logs came down, they have got the records of that.

Q. Most of the logs came down and laid around the flats here in the lower part of the bay, didn't they?

A. Well, I explained it. Lower part of which bay?

Q. Upper St. Louis Bay around Grassy Point.

A. Oh, yes. As I said, they were all over wherever they could

go; there was so many logs they scattered in every nook and corner and bayou.

Q. You don't mean to say that you ran up there with a
855 boat drawing nine or ten feet?

A. No, of course not. That's where the logs went.

Q. You didn't attempt to go all over the bay with that boat?

A. Oh, no.

Q. Did you know of any bar to the northerly of this Snowshoe Island? Never heard of any bar?

A. Never had any trouble going through. Where do you mean, the north of this Snowshoe Island?

Q. Yes.

A. Never heard of it; never heard of any bar.

Q. Did you know of any dredging that went on above Grassy Point in 1893?

A. Oh, yes.

Q. Where was it?

A. Oh, it was all along the flat there; the Government channel is there and where they filled them places.

Q. In 1893?

A. I don't know the year. I know it was after 1889.

Q. Well, what year was it?

A. Well, I don't know the year.

Q. You wouldn't attempt to say?

A. The Government has got that.

Q. If someone hadn't talked to you about these times you were up there you wouldn't remember that?

A. What?

Q. The year.

A. I don't remember now, I tell you. When the logs came down I was there, and they all know, at least they have got the records for that.

Q. Is that the only boat you ran, this boat drawing nine or ten feet, in getting these logs?

A. At that year, yes.

Q. You couldn't get to any shoal places?

856 A. I didn't get in to any shoal places.

Q. Who was picking up the logs?

A. The lumber firms, the owners, I suppose.

Q. What other boats were at work picking up the logs?

A. I didn't have only my own.

Q. Just yourself?

A. Well, I don't remember. I don't remember thirty years ago what boats were there, or twenty-nine years.

Q. There must have been a good many little boats going over the shoal places, weren't there?

A. I don't remember.

Q. Can't remember one?

A. No, I can't remember.

Q. I want you to step up here and look at a map. I will ask you this: Could you take a map that didn't have that yellow streak on

like was shown you on Exhibit 29 and point out that exact channel that you came over, make a drawing of it?

A. Take a map.

Q. Yes, showing the Minnesota shores, and you draw the channel yourself?

A. No.

Q. You couldn't do that?

A. I couldn't do it. All I know I was going by the Government chart. That is all we had to go by, the Government chart.

Q. Taking a map now without showing any of the soundings on it, simply showing the shores, Minnesota and Wisconsin shore and the islands, you wouldn't attempt to——

A. Yes, I could do pretty well at it; not be exact; but we wouldn't be exact on our courses; sometimes we run aground.

Mr. Fryberger: Now I want to call your attention to an island here which I think it will be conceded by counsel is Snowshoe
857 Island on Wisconsin's Exhibit 31-E, and will it be conceded that what I am pointing to is Snowshoe or Pie Island on Wisconsin's Exhibit 31-E?

Mr. Gard: I understand that is it.

Q. You place that now, do you?

A. Yes.

Q. Now then, when you took the short-cut you went to the south of this island I am pointing to?

A. The cut-off, yes; not the short-cut; the cut-off.

Q. In 1889 you had a boat that drew between nine and ten feet of water?

A. Yes.

Q. And you went up to the north of this island when you went up, what you call the main channel?

A. Yes.

Q. Now I call your attention to some soundings here which are Government soundings, Government figures, four feet one, seven feet three, seven feet nine, and five feet nine, running clear across between what is marked as the two dock lines on that channel. Now the evidence shows that there was no dredging in that particular place until the year 1893. Now I want you to show on this record by your testimony how you went over that bar with a boat drawing between nine and ten feet of water, if that is the place you claim you went, if that is the channel you claim you went?

A. Yes. That is the channel we went. Is this authentic?

Q. That is a map that is put in here by the State of Wisconsin and shows the Government soundings. We are not faking you here.

A. Well, we went there.

Q. You claim you went over that with a boat drawing between nine and ten feet?

858 A. Yes. That is the channel here. If you show me the Government chart I will show you where I went.

559

Q. Now as a matter of fact, the shoal water extended at that point for more than a hundred feet, did it not?

A. That I don't know.

Q. Wasn't eight feet deep at any point for a hundred feet—that you don't know?

A. No.

Q. You never struck any such point as that; you never struck any such shoal as that?

A. No.

Q. You couldn't hop over any such shoal as that with your boat drawing nine or ten feet?

A. No.

Q. Don't you think that if that shoal is there, or was there prior to 1893, that you must be mistaken about running a boat at that point, drawing between nine and ten feet?

A. If it was there we couldn't get over; that's sure.

Q. Don't you know that the Government did dredge that out in 1893; don't you know that the Government dredged it out for the purpose of allowing barges to bring lumber down from the saw-mills of Duluth?

A. No. I wasn't there during those years. I was on the Odin doing the ferry end of it between Duluth and Superior.

Q. Did you know Mr. Alfred Merritt when he used to navigate in this country?

A. I knew Alfred Merritt.

Q. Did you know that he ran a boat here?

A. No, sir.

Q. Never heard that, did you?

A. Not that I know of.

Q. Did you know Mr. McManus who lives in Superior, now a locomotive engineer, who used to run a boat?

A. I know Charlie well.

859 Q. He used to run boats there?

A. He was on a tug there in the harbor.

Q. He knew where those channels were?

A. I don't know that.

Q. You don't know that?

A. I guess he was here with Jim Hancock.

Q. You worked for Duncan and Brewer, did you?

A. I did some towing for them, yes.

Q. When?

A. In '87 or '88.

Q. Mr. Brewer was the man that had charge of the outside work?

A. Yes.

Q. He was the man that you went up the river with?

A. I don't know whether I went with him or not.

Q. He was on the boat frequently with you, wasn't he?

A. I don't remember. I hauled some logs for him.

Q. He had direct charge of it, did he not?

A. Yes, sir.

Q. He was familiar with those channels?

A. Yes.
Q. You never took him down that channel you have described?
A. No. He was on another boat at that time. He was on a lighter draft tug.
Q. Then you went a different way?
A. I certainly testified that from the start, yes, sir.
Q. When you were working for Mr. Brewer and when he came down with you, didn't you go to the south of Big Island as well as north of the Big Island?
A. No.
Q. Always went south of Big Island?
A. With that tug when I was towing for him.
860 Q. As a matter of fact, didn't you come down on both sides of Big Island with Mr. Brewer when you were towing for him?
A. I don't remember.
Q. How can you remember where you went——
A. I don't remember. I know I have been on both sides; with the light draft took channel on the south side.
Q. And you may have come down with Mr. Brewer on both sides?
A. I may. I don't remember.
Q. Mr. Brewer was perfectly familiar with that river, wasn't he?
A. He ought to be, yes.
Q. Now, of course you have used your memory to the best of your ability to try to do the best you could on thinking back?
A. That is what I am here for.
Q. And you feel that there may be some possible error in your testimony, don't you?
A. Can be in any man's testimony, possible error, yes.
Q. The rushes didn't grow up in any of these channels up there, did they?
A. No. That's what I testified in the first place. Rushes didn't grow in the channels.
Q. Neither in the south channel nor in the north channel?
A. No.
Q. No, of course not. And where water is seven feet deep or eight feet deep or nine feet deep you don't have rushes, do you?
A. No. I guess they do about five feet.
Q. Well, I didn't ask you about five feet.
A. Not much deeper; five or six feet.
861 Q. Were you acquainted with several of the captains that ran up and down there in the early days?
A. I was.
Q. What about Dave Morrison?
A. Never heard of him as being a captain on a boat; don't believe he was.
Q. Did you hear Mr. Banks testify yesterday?
A. No.
Q. That Dave Morrison——
A. Yes, Dave Morrison. I guess, if you find out, he hasn't got license to sail a boat.

Q. I think I will agree with you.
A. Then you are thinking I am telling the truth.
Q. I think you do on that and I don't question but what you are trying to tell the truth on anything.
A. That's what I am. I am here for that purpose. My home is in Duluth. I own property there.
Q. You have been in Wisconsin?
A. I have, and I have got just as much respect for Wisconsin as I have for Duluth.
Q. Oh, yes, you ought to have, and so have I.
A. (No response.)

Redirect examination.

By Mr. Gard:

Q. Counsel pointed you to one of these exhibits. I will ask you if that wasn't Wisconsin's Exhibit 31-E? Just come around here and look?
A. I know nothing about E, but if they showed me a Government chart I would tell them.
Q. This is the chart that counsel pointed you to, is it not, this chart here?
A. Yes.
Q. And this is Wisconsin's Exhibit 31-E?
A. Yes. Why don't you show us something we are familiar with, chart, Government chart?

862 Recross-examination.

By Mr. Fryberger:

Q. Duncan and Brewer towed logs and boom sticks down that river after 1893, didn't they?
A. I think so.
Q. You did some work for them after 1893?
A. I did, but not with the tug boat.
Q. But you did some work for them after 1893?
A. I can't remember.

By Mr. Bailey:

Q. What other boats did you use in 1889 besides the ten-foot draft boat?
A. No other tug that I know of, but the year before that I think——
Q. Weren't you picking up logs with some smaller boats or tugs in 1889?
A. I don't remember.
Q. Don't remember?
A. No, I don't remember. I do remember about getting the telegram about their breaking away and I was the man that went to get the boom sticks.

Q. Weren't you going all over the bay collecting the logs at that time?

A. Where we could go, yes.

Q. You went all over the bay, didn't you, wherever the logs were?

A. They were scattered.

Q. You went after the logs wherever they were scattered?

A. Wherever I could get.

Q. And up along the edges of the banks anywhere the logs were lodged?

A. Oh, no; no, I couldn't go in the woods after them. They were away up in the woods. I went where the water would allow me to go.

863 Q. Who got them up in the woods?

A. They rolled them out and swamped them out and anyway to get them out.

Q. What I am getting at is you went in shallow water to get the logs where there was water of four or five feet depth?

A. I couldn't gather with a boat drawing ten feet of water.

Q. I am asking you if you didn't take other boats?

A. I don't remember.

Q. You may have done so?

A. I don't remember anything about it.

Q. Were there other boats collecting logs and bringing them to you?

A. I don't remember how that was, whether they flooded them out to us and got them to run a long line through them—different ways of getting them; running long lines, you know, different ways; I can't remember all them little things for that many years.

Q. It is so hard to remember, it may be true that you were using a smaller draft boat in collecting those logs, may it not?

A. I don't remember anything about it.

Q. And it may be true that the year that you ran this ten-foot boat was a different year than 1889?

A. Yes. I said that in the first place. They've got the records when them logs came down: that is the year, and they all knew, at least all these lumbermen, that is the year, whatever it was, but I said I thought it was 1889; I never said it was that year at all. There can't be any dispute if they know it. I didn't mark it down.

Q. What I am getting at, Mr. Shea, is how it is that you

864 know it was with a ten-foot boat that you collected logs?

A. Because I know. As I said in the first place, they sent the telegram from Thompson that the logs broke away and got to get some boom sticks and corral them and I remember it well today and I remember the logs coming down about eleven o'clock at night.

Q. It didn't say anything in the telegram about getting a ten-foot boat?

A. No. I sailed the Rambler and I knew she drew about ten feet of water.

Q. You don't remember what year?

A. I do. It's that year.

Q. What makes you remember that?

A. Because that is the year the logs came down. I remember handling the logs, stopped them from going out into Lake Superior; remember getting the boom sticks and anchoring them and tying them to that pier north of the N. P. bridge. I remember all them things distinctly.

By Mr. Fryberger:

Q. But you can't remember a single fellow that helped you get these logs?

A. They made up the logs, as I say, we may have got long lines and pull them in.

Q. I am not asking you what you may have done. I am asking you what men you remember?

A. I don't remember.

Q. You don't remember whether you got them that way or whether small boats went and got them?

A. No.

Q. As a matter of fact, the logs got away three times up there, three different years?

A. I don't know, but that is the year that——

Q. Just answer my question, if you don't know say so.

865 You don't know whether they got away three different times or not?

A. No, I don't.

Q. Didn't the Miller logs get away once?

A. Don't know.

Q. Didn't the Cloquet logs get away twice?

A. I don't know.

Q. Who did you take these logs out for?

A. I don't know the name of the company now. I know they claimed there was 90 million feet and I know I have been here thirty years and I never heard of so many logs before.

Q. You don't know whether they were Miller's or C. N. Nelson Lumber Company or——

A. Nelson.

Q. You think they were Nelson?

A. Nelson, yes.

Q. When did Miller's logs come down?

A. I don't know.

Q. When did Shaw's logs come down?

A. I don't know.

Q. How long after 1893 did you tow for Mr. Brewer down that river?

A. I didn't tow any logs after 1893.

Q. Didn't you say in your testimony on cross-examination a little while ago——

A. I said in 1888, '87 or '88. In '93 I owned the team ferry here and was on her in '94 or '95.

Q. I just asked you a few minutes ago about hauling stuff for Mr.

Brewer in 1893 and you said you did. What do you want to do about that; do you want to change it?

A. How long after?

Q. I am asking you.

A. Not in '93.

Q. You want to change that if you said that before?

A. Did I say I hauled logs in 1893, is it there?

Q. Sure it's there. I will ask you one question, something the Reporter didn't take. What did you say about his being

866 with the sports in 1893?

A. You say he was up there and rode with me in 1893. It must be then, because I wasn't towing logs.

Q. And if you said you were with Mr. Brewer in 1893, that's wrong?

A. Yes.

Q. You want to change that?

A. I don't want to change it; I didn't say it. I couldn't say it. I want him to read it for me.

By Mr. Gard:

Q. As a matter of fact, were you or were you not up the river in 1893 towing logs?

A. Towing logs, no; positively no, because I owned the Odin and was team-ferrying between Duluth and Superior in 1893.

By the Commissioner:

Q. Now, when you went up the bay last Monday what route did you take?

A. We kind of followed the channel.

Q. What you call the main channel?

A. The main channel.

Q. How high up did you go?

A. We went away up to the brickyard.

Q. Is that above the Big Island?

A. No. Just about abreast of Big Island.

Q. Did you follow approximately the old channel?

A. Oh, no; we couldn't.

Q. Why not?

A. There is bars, and filled in, and the Government has filled in places there, you know, since the old channel, since we used to run the old channel its changed; the Government has changed it; got buoys and beacons to guide you. The old channel is obstructed in many places.

867 Q. Did you find any structures in the old channel?

A. That's what I say. There's obstructions in the old channel.

Q. Did you find a structure called the Carnegie Dock up there?

A. I did.

Q. Did you look at that?

A. I did.

Q. Did you see some marks on it marked "Minnesota" and "Wisconsin"?

A. I did not. I only went by the best judgment of the way we used to go.

Q. Is it your best judgment that that structure is across the old channel?

A. Yes.

Q. Is there any other structure across the old channel?

A. I think the Blast Furnace docks.

Q. You think they are across?

A. Yes; of course we were out, but we didn't go ashore to observe very closely, but to the best of my knowledge.

Q. You didn't go up above Big Island on this trip?

A. No. I got off there and took the street-car home.

By Mr. Fryberger:

Q. Did you ever go up to Millford in the early days?

A. Yes, we went up past it, yes.

Q. Did you ever go up there and stop?

A. Not that I know of.

Q. Did you ever get any logs up there?

A. Not for the Millford, no.

Q. Was there an entirely different route to go up to Millford from what you took when you went up the river?

A. Well, each boat—We always went along that way
868 when we went the main channel, close there to Millford.

Q. Anyway, when you took any boat wasn't there an entirely different route when you went up to Millford?

A. When we went the cut-off we didn't go to Millford.

Q. You didn't go to Millford when you went up the river north of Snowshoe Island, did you?

A. Close there.

Q. You didn't go to it?

A. Oh, no.

869 WALTER J. CAYO was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Captain Cayo, where do you live?

A. I have lived in the City of Duluth for thirty-two years.

Q. Where do you live now?

A. I moved over here about a month ago.

Q. You lived in Duluth thirty-two years prior to that time?

A. Yes, sir.

Q. Moved over here about a month ago, you say?

A. About a month ago.

Q. By that you mean in the City of Superior?

A. Yes, sir.
Q. You are now in business in Superior?
A. I am working here, yes.
Q. What has been your business in past years?
A. Been a paper-hanger and all round general painting.
Q. What is your business prior to that time?
A. Master of steamboats.
Q. Have you carried a pilot's license?
A. Yes, sir.
Q. Master's license?
A. No, sir; first-class pilot.
Q. When did you carry a pilot's license?
A. From 1887 until 1907.
Q. What navigation did you do in those years?
A. Why, the principal part of my work is in Duluth and Superior harbor.

870 Q. With what kind of boats?

A. Handling ore boats and freight boats and lumber barges and so forth, passenger boats in and around the harbors.

Q. To what extent have you navigated the St. Louis River?

A. Well, I have been up there off and on for several years during the time that the lumber mills were running up there.

Q. "Up there", do you mean New Duluth?

A. Yes, sir.

Q. Any other business up there?

A. Why, I have went up to Fond du Lac. In '95 I had a passenger boat there chartered part of the season.

Q. And when did you first navigate the St. Louis River above Grassy Point?

A. About 1900.

Q. Do you mean 1900 now?

A. Yes; 1900.

Q. What?

A. 1890; 1890.

Q. That was more than twenty years ago, was it?

A. Yes, sir; it's about 22 years ago; something like that.

Q. What boat did you use at that time?

A. Well, when I was on the Inman line I used the Tug Buffalo; Berry line I used the Tug Tomlinson; and in the Singer line I was in the Tug Abbott, H. B. Abbott; and also in the Tug Excelsior.

Q. Now, in 1890 what boat did you use in navigating above Grassy Point?

A. Tug Buffalo.

Q. What kind of a boat was that?

A. She was a boat that drew about nine foot six of water.

Q. And what boat did you commence to use up the St. Louis above Grassy Point?

871 A. Well, I used the Tug Fisk for the same line.

Q. How much water did that draw?

A. She would draw about nine feet.

Q. What other boats did you use?

A. In that line or the other line?
Q. Any line.
A. The Tug Tomlinson for the Berry line.
Q. How much water did that draw?
A. Eleven feet six inches.
Q. What other boat did you use?
A. Tug Abbott.
Q. How much water did that draw?
A. About ten feet.
Q. What other boat have you used?
A. Tug Superior.
Q. How much water did that draw?
A. Somewhere about ten foot six.
Q. And what other boats?
A. The Excelsior.
Q. How much did that draw?
A. She would draw very close to eleven feet of water.
Q. What other boats have you used?
A. None up the river.
Q. None other up the river?
A. No, sir.
Q. Now, what kind of business were you engaged in with these boats going up the river?
A. A vessel-towing business.
Q. What kind of cargoes were you towing?
A. Lumber, carrying lumber.
Q. What on, scows?
A. On sailing vessels, towing barges.
Q. That is, they would load at the mills up the river and you would tow them down?
A. Tow them down and connecting them on the steamboat outside out in Lake Superior and go down the lake with it.
872 Q. Did you tow them up?
A. Yes, sir.
Q. And towed them back?
A. Yes, sir.
Q. Now, what years did you cover or what years was it that you used these boats that you have mentioned up the St. Louis above Grassy Point?
A. Between 1890 and 1897.
Q. Were you doing much business up the St. Louis River in these years?
A. There was considerable lumber shipped from there.
Q. Did you do any other business than tow lumber boats up the river?
A. No, sir.
Q. Just lumber boats?
A. Just lumber boats.
Q. What course did you take, Captain, going up the river, after you go around Grassy Point?

A. Well, there is no particular course there; it is a circuitous route, serpentine.

Q. You showed me a sketch you made this morning?

A. I made that night before last.

Q. You showed it to me this morning?

A. Yes, sir.

Q. You made a sketch showing the course you took, didn't you?

A. Approximately what it would be.

Q. Did you do that on your own motion?

A. Yes, sir.

Q. Produce that, will you, and let me see it. (Witness produces paper.) I show you Wisconsin's Exhibit 47 and ask you if you made that sketch?

A. Yes, sir.

Q. Is that the sketch you made night before last?

A. Yes, sir.

Q. Near the lower left-hand corner of this sketch is G. Pt.; what does that mean?

A. It's Grassy Point.

Q. After passing Grassy Point you had sketched what
873 looks like two channels. What do those represent?

A. One was the natural channel and the other the short-cut.

Q. Is the short-cut to the right or left of the old natural channel?

A. Left; port side.

Q. As you go up?

A. Yes, sir.

Q. Now, in sailing your boats up the river, that you have mentioned, what channel did you take?

A. The old natural river bed.

Q. As shown on this sketch here?

A. Yes, sir.

Q. The one bearing to the right after you passed Grassy Point?

A. Yes, sir.

Q. You have penciled something——

A. Supposed to be Carnegie Fuel Company.

Q. These pencil marks here are supposed to be what?

A. The Blast Furnace and the Carnegie Fuel Company.

Q. As they now exist?

A. Yes, sir.

Q. Were they there when you navigated the channel?

A. No, sir.

Q. They have been built across the channel since you navigated it?

A. Yes, sir.

Q. Have you indicated what was known as the cut-off channel on this sketch?

A. Approximately, yes.

Q. Have you indicated an island up a little above the Zenith Furnace Company's property?

A. Yes; there used to be an island there.

Q. What was it called?

A. Some of them called it Fishermen's Island. There was another name for it. I forget what it is.

Q. Was it called Tollis Island?

A. Yes; Tollis Island.

874 Q. Have you indicated another island out almost opposite to Zenith Furnace Company?

A. Yes; but that's been dug away.

Q. What is that island called?

A. Shoepack Island. That is the old name.

Q. What name have you written on there for that island?

A. Shoepack Island.

Q. Do you think this is approximately a correct reproduction of the channel as you navigated it?

A. As near as I can remember, yes.

Q. And by that you mean the channel that bears to the right after you pass Grassy Point?

A. Yes, sir.

Q. And that one that extends pretty near straight; what is that?

A. That is the new Government channel.

Q. You have marked something that looks like a flag up above the Zenith Furnace Company.

A. There is the beacon light.

Q. Government beacon light?

A. Yes, sir.

Q. You have marked a large island up here; what is that?

A. They call it Big Island or Clough Island.

Q. What letters have you put on there to indicate that?

A. Bg. Island.

Q. That is Bg. I., this means Big Island. Somewhere near opposite Big Island on the main channel you have marked on the Minnesota shore, you have marked Bk. yds.; what is that?

A. The old brickyards. That's Ironton (indicating).

Q. What letters have you put there to indicate Ironton?

A. Ironton.

875 Q. What letters are those a little further up that you have indicated?

A. Spirit Lake boat-house, club-house; Spirit Lake dock I have it marked.

Q. Spirit Lake dock that is, instead of Spirit Lake boat-house, Spirit Lake dock; and then you have indicated Spirit Island on here, have you?

A. Yes, sir.

Q. How have you indicated Spirit Island?

A. Spt. Isl.

Q. I will ask you if that sketch represents the channels as near as you can make them?

A. As near as my memory allows me to grasp them in my own mind the channels I used to run.

Q. At what point on the river do you mean now, the channel you used to run?

A. From St. Louis Bay running through the Grassy Point bridge and around by Grassy Point by the Carnegie Fuel and the Steel Company dock is now to alongside of the brickyard, the main channel on the Minnesota side by Ironton, Spirit Lake and St. Louis River, going on up the main channel.

Q. What course did light draft boats usually take in going up the river above Grassy Point when you navigated there?

A. They would generally go in by the short-cut by Pokegama Bay.

Q. You mean southerly of Big Island?

A. Yes, sir.

Q. And what course did the deeper draft boats take generally going up above Grassy Point?

A. I always took the main river on the Minnesota side.

Q. The one you have indicated there to the right of the dredged Government channel after you passed Grassy Point?

A. Yes, sir.

Mr. Gard: I offer in evidence Wisconsin's Exhibit 47.

876 The Commissioner: It is received in evidence.

Q. What was this channel called that you took to the right there, you say, of the dredged channel after you passed Grassy Point?

A. Why, we called it the natural channel.

Q. What was it generally called?

A. Well, supposed to be St. Louis River.

Q. Well, what was the other course called that went southerly of Big Island?

A. That was a cut-off. It cut off about three miles of the main river running up there, approximately.

Q. In going up what you call the natural channel did you encounter currents usually?

A. Yes, particularly in the spring of the year and during the heavy rains in June we would have some pretty heavy currents there sometimes.

Q. Was there rushes or weeds grew up either side of this natural channel?

A. Yes, sir.

Q. Did you use that as a guide largely in the summertime?

A. We did in the summer time and before they came up in the spring we used to have to set buoys in these turns in the natural channel.

Q. Did you place any buoy there yourself?

A. Yes, sir.

Q. Have you indicated on this sketch, Wisconsin's Exhibit 47, where that buoy was placed?

A. Yes, sir.

Q. Where is it?

A. Right there (indicating).

Q. Now, I wish you would mark that plain. Will you mark it

"buoy"; just put a cross where you set the buoy. You have marked on Wisconsin's Exhibit 47 a red cross, have you not?

A. Yes, sir.

877 Q. Is that where you placed the buoy?

A. Approximately, yes.

Q. What was the purpose of placing that buoy there?

A. To guide us up the river.

Q. What kind of a buoy was it you placed there?

A. Just a common spar buoy.

Q. Did you place it there yourself?

A. My crew and myself did, yes.

Q. More than one season or not?

A. We would have to put a buoy pretty near every season because the ice would tear that away in the spring. The ice would carry the buoys during the spring freshet in the spring of the year and we would have to reset them pretty near every spring.

Q. About how many springs would you say you placed the buoy approximately where you have indicated by the red cross on Wisconsin's Exhibit 47?

A. Several years, as long as the lumber mills used to run up there; as long as they shipped lumber; 1890 to 1897, about the last lumber shipping there was done there.

Q. We have accidentally blurred this cross. I think it shows on the sketch where the cross was made but it has been blurred considerably since you put it on. The cross that you marked on there is where the reddest portion is now since it has been blurred, is it not?

A. Yes.

Q. It is easterly or below the coal-dock, isn't it?

A. Yes, sir.

878 Cross-examination.

By Mr. Fryberger:

Q. Mr. Cayo, you say that you have a pilot's license?

A. I discontinued in 1907.

Q. I didn't ask you that.

A. I don't have them now, no.

Q. That is all you ever had, was a pilot's license?

A. First-class pilot's license.

Q. You never had a master's license?

A. No.

Q. From what office was that license issued?

A. From the Duluth office.

Q. Does the cancellation show there?

A. I never had it renewed. I don't know whether they are canceled or not.

Q. You quit in 1907?

A. 1907. Never renewed it. Went out of the business.

Q. How old are you?

A. Forty-nine years.

Q. You lived in Duluth until about a month ago?
A. Yes, sir.
Q. How did you happen to move to Superior?
A. Liked the town better, more business over here.
Q. That is when Duluth went dry you preferred to go to a wet city?
A. Not necessarily; more business over here in my line of business.
Q. What is your business?
A. Painting and paper-hanging and decorating and so forth.
Q. I suppose you didn't object to the city being wet when you came over?
A. Not a bit.
Q. And you did object to Duluth going dry?
A. Not necessarily.
879 Q. But when it went dry you moved over to Superior?
A. Quite a while afterward.
Q. Well, when did you start in the painting and papering business?
A. In 1908 or '9; something like that.
Q. What was your first experience as painter and paper-hanger?
A. I have had some experience in painting boats and knew something of it; painting the cabins and so forth.
Q. You worked with your own hands?
A. Yes, sir. My brother was a practical man and I was in business with him.
Q. You were not a practical man?
A. I am now.
Q. You actually put paper on the walls yourself?
A. Yes, sir.
Q. And also paint?
A. Yes, sir.
Q. That is, you do the painting yourself?
A. Well, excepting when I hire someone to help me. I am always in the harness.
Q. And since you came over to West Superior a month ago you were painting and papering?
A. Yes, sir.
Q. Now you understand what this controversy is about, do you?
A. Why, nearly so.
Q. You understand it is a fight between Minnesota and Wisconsin over the boundary line?
A. Yes, sir.
Q. And you understood before you testified here where Wisconsin wanted to establish the line, didn't you? They told you what they wanted?
A. No, not necessarily.
Q. Did they tell you where they claimed the line was?
A. Well, they asked me to go up with them and find to the best of my ability, to find where the old natural channel was.
880 Q. You knew they wanted the channel to run in the Carnegie coal-dock and the Zenith Furnace Company?

A. I don't know.
Q. You knew they wanted it there?
A. They didn't state in so many words.
Q. Didn't you understand from what was said that that's what they wanted?
A. They told me it was a controversy between Wisconsin and Minnesota.
Q. Didn't they ask at that point——
A. They got to the point of the Carnegie Fuel Company and asked for the old channel and I showed them where it used to go.
Q. You said you started to navigate in 1890?
A. 1887.
Q. You didn't run up the river in '87?
A. No, sir.
Q. Where were you?
A. I was around the Duluth-Superior harbor.
Q. When was the first time you went up the river to upper St. Louis Bay?
A. Somewhere in 1890.
Q. Do you remember the time?
A. Sometime during that season.
Q. The first thing you did up there, was it not, was to haul lumber?
A. Yes, sir.
Q. The mills weren't constructed up there until after 1890, were they?
A. Yes, sir, they were, to the best of my knowledge.
Q. They didn't bring down any of these sail-boats loaded with lumber till that dredging was done or dredged out that bar in 1893?
A. What bar do you mean?
Q. The Zenith and the Carnegie coal-dock?
A. I never knew of any dredging being done there.
Q. You traveled that river the same channel from 1890—
881 A. They done some scraping where Spirit Lake enters into the main river.
Q. Wait a minute. You traveled that channel, as you call it, from 1890 to what date?
A. To 1897.
Q. And you never knew that they did any dredging there on a barge up above the Carnegie coal-dock and Zenith Furnace Company?
A. I don't remember of any. There might have been some dredging there; might be a month that any of us wouldn't take a trip up there.
Q. Your first boat was the Buffalo?
A. Yes, sir.
Q. Drew nine foot six?
A. Yes, sir.
Q. Fisk drew nine?
A. Yes.
Q. Those were tugs; they hauled no loads?

A. They were tug boats.
Q. The Tomlinson, eleven six?
A. Yes, sir.
Q. When did you use the Tomlinson?
A. In 1897.
Q. When did you use the Fisk?
A. Somewhere about 1891; '91 or '92; something like that.
Q. Can't you place it any closer than that?
A. No.
Q. When did you use the Buffalo?
A. I was on her five years, from 1890 to about 1895; and we didn't sail the Fisk regularly. I simply made a trip or two up the river when possibly my boat was broken down or something; but I knew I had been on her up the river.
Q. And the Excelsior drew eleven feet?
A. No; drew ten foot six.
Q. Didn't you say eleven feet?
A. No, sir.
Q. When did you sail that?
A. 1897.
882 Q. For how long?
A. One season. That is, the three boats one season: the Abbott, the Excelsior, and the Superior.
Q. The channel was dredged, the main channel as it is now was dredged from 1900 to 1902, wasn't it?
A. I think so.
Q. You knew about when that was dredged?
A. Why, 1902 and '3 I was in Ashland.
Q. I want you to step up here and look at this exhibit 31. Here is a map, exhibit 31-E. I call your attention to Wisconsin's Exhibit 31-E, being a map made from surveys made under the direction of Captain W. L. Fisk in April and May, 1891, by J. H. Darling, Assistant Engineer, assisted by F. L. Dever. Now I want to call your attention to the soundings on this map up the bay from Grassy Point in a westerly direction between the dotted lines marked dock line on the north and dock line on the south, to the soundings here four feet one, seven feet naught, seven feet nine, and five feet nine. Now is that the channel you went through in 1890?
A. That is the channel. I came down here (indicating); seems to me, according to the new channel that has been dug there, that the old channel came closer to the Blast Furnace dock.
Q. You recognize these lines, dock line on this map?
A. Yes, sir.
Q. Exhibit 31-E, you recognize that, do you, as showing the new channel?
A. Yes.
Q. That is the way the new channel goes, is it?
A. Yes. Looked that way to me on this map.
Q. Now, as a matter of fact, that isn't the new channel
883 at all, is it?
A. Well, the new channel ran along here (indicating).

Q. Then this is the new channel, in your opinion, as marked on this map, between the dock line shown here I called your attention to?

A. I never was through that new channel.

Q. I ask you whether this was the new channel as shown on these maps?

A. (No response.)

Q. The old river bed didn't run between these dock lines marked "dock lines" that I called your attention to?

A. These dock lines there, the new channel is entirely foreign to me as far as Grassy Point is concerned.

Q. As a matter of fact, you don't know where you did go, do you?

A. Yes, I do.

Q. I want to call your attention to these soundings on this map, four feet one, four feet naught, seven feet nine, five feet nine. Did you run your boats in 1890, prior to 1893, over any such shoal spots as that?

A. We towed lumber barges right up to New Duluth in 1890 till 1896 or '7.

Q. Did you take a tug over any such shoal places, a tug drawing nine feet of water?

A. Never touched a thing.

Q. You are entirely mistaken in your dates, aren't you?

A. No, sir.

Q. You did haul lumber down there after 1893?

A. Yes, sir.

Q. That is, these sail-boats you speak of?

A. Yes.

Q. How much water did they draw?

A. From eleven to eleven foot six.

884 Q. And you hauled those down there in 1890, didn't you?

A. Yes, sir.

Q. And in 1891?

A. Yes, sir.

Q. Don't you know that that shoal place that I have called your attention to wasn't dredged until 1893?

A. Never struck that shoal place. The only shoal place that I ever saw was up there around Big Island where Spirit Lake——

Q. Just point out on the map where that shoal place is that you found up around Big Island?

A. Right in there.

Q. Right in there? Well, that would be to the northwesterly of Spirit Lake. That is the only shoal place you struck?

A. Just about northwesterly. It was just after passing Big Island, anyway.

Q. Now, rushes wouldn't grow in seven feet of water, would they?

A. Oh, yes, they would.

Q. Did you hear Mr. Shea that just preceded you on the witness stand say that they wouldn't?

A. Well, I know——

Q. I asked you if you heard him say that?

A. No.
Q. If he did say it, what do you think about it?
A. I think he is in error.
Q. In error or in errors?
A. Yes.
Q. You think he is in errors. Well, do you remember the island on your little plat here?
A. Shoepack Island.
Q. What was that number, 47? You call it Shoepack?
A. Yes, sir.
Q. The other witnesses called that Snowshoe?
A. Yes; some call it Shoepack and some call it Snowshoe.
885 Q. Now, there was one witness at least for the State of Wisconsin who testified here that in that old channel they took when they went up north of Snowshoe Island they went within 75 or a hundred feet of that island. What have you got to say about that?
A. It was further away than that.
Q. How many feet away?
A. I should judge probably 5 or 600 feet.
Q. Could you go with a boat drawing seven feet within 75 or a hundred feet of that island on the northerly side?
A. I never tried it.
Q. Did you ever hear of anybody trying it?
A. No. I saw small launches floating around there, running around.
Q. Did you ever see John Norton on that upper bay?
A. No, not particularly; I don't know.
Q. Don't you know that he ran a boat there for Inman for some time?
A. He ran boats there. He worked for Inman about four months.
Q. Did you ever see him coming down the river?
A. No, sir.
Q. Did you ever know that he came down there?
A. No.
Q. Do you know whether he was familiar with that bay or not?
A. I don't think he was.
Q. You don't think he worked there?
A. Not at that time.
Q. At any time?
A. He might have got a knowledge of it since that time.
Q. You don't think he ran up there at all?
A. Not that I remember of.
886 Q. Did you ever know McManus going up there?
A. I didn't know McManus. I knew an engineer named McManus.
Q. Engineer on the Great Northern road?
A. Yes, sir.
Q. Do you know whether he went up there?
A. I don't know whether he sailed there before I done any sailing.

Q. You don't know where the boats went in the early days before the dredging was done?
A. Why, yes.
Q. You do?
A. I know where I used to go.
Q. Yes. But before you came you don't know anything about it?
A. No, I don't know anything about that.

By Mr. Bailey:

Q. Did you know about a channel that went right around the Wisconsin shore right close to the Wisconsin shore and then took the cut-off as you call it?
A. Why, there was a middle ground there. There used to be six or seven feet of water in it. Light draft boats used to go through it. I never went through with heavy draft boats.
Q. That was quite close to the Wisconsin shore?
A. Part of it was.
Q. That was called natural channel, wasn't it, too?
A. I suppose that was the natural channel where light draft boats went.
Q. There was several natural channels in the bay, wasn't there?
A. Slough holes——
Q. I say, there was several natural channels in the bay, wasn't there?
A. There was only one deep natural channel.
Q. I say, there was several natural channels in the bay?
887 A. I said there is two that I know of.

By Mr. Fryberger:

Q. I want to call your attention to Minnesota's Exhibit 1, being the Meade map, and you now understand, do you, where I am pointing?
A. Yes, sir.
Q. I want to call your attention to the red line starting at a point marked A, running up past G, running to B, and then to C. Do you remember that channel?
A. No, sir.
Q. Did you ever go over that?
A. No, sir.
Q. Did you ever hear of anybody going over it?
A. Not that I know of.
Q. There wasn't any channel there at all?
A. No, sir.
Q. You didn't see any rushes growing at that point, did you? Did you see any rushes growing along that line at any time?
A. Yes.
Q. Right in that red line?
A. I wouldn't say particularly right in that red line, but in that neighborhood.
Q. Will you say that there wasn't at all times while you were

familiar with that river, if you were, open water along the part of the bay indicated by this red line running from A to C?

A. There was spots in there.

Q. And there was spots where there were rushes, were there?

A. No, sir.

Q. How sure are you?

A. In going by the channel I could see.

Q. You are perfectly sure of that?

A. Yes, I think I can.

Q. Now, one witness said that when they went up beyond
888 Grassy Point and turned in beyond Grassy Point they were from 1500 feet to 2000 feet from the Minnesota shore. What have you got to say about that?

A. No, sir.

Q. That is wrong?

A. According to my idea.

Q. You know something about distances, do you?

A. Yes, sir.

Q. Do you know Captain Smith, the man that runs the America?

A. Yes.

Q. He has been a sailor a good deal longer than you have?

A. Sailed outside a good deal. I don't know what sailing——

Q. He has sailed a good deal longer than you have?

A. Yes, sir.

Q. You have known him as a captain for a good many years?

A. Yes, sir.

Q. Don't you think he is a man that knows what he is talking about?

A. He ought to.

Q. Don't you think his judgment would be as good as yours on nautical matters?

A. On the outside might be better.

Q. Now, take this red line running from E, running around to F. Did you ever know of that channel?

A. I know it as far as Pokegama Bay.

Q. Did you ever go further on up to F?

A. No.

Q. Did you ever know of anybody using it?

A. I have seen boats plying through there, yes.

Q. Did you know of the channel from B to D?

A. No.

Q. Never saw any boats there, did you?

A. I saw boats plying in that water.

889 Q. But you knew nothing about it?

A. I didn't know where the channel was, no, in there. My boats drew too much water.

Q. Then you never went up through the channel south of Big Island?

A. Not with heavy draft boats.

Q. Did you ever go from B to D with any kind of a boat?

A. I went through about here with the Henrietta.

Q. You went along from A to G and up to B and then over to D when you took the short-cut?
A. Yes; somewhere along in there.
Q. That looks about right to you, don't it?
A. Yes. We used to run along through there.
Q. What boat did you run up there?
A. The Steamer Henrietta.
Q. You didn't run through any rushes when you went through there?
A. There is rushes on both sides.
Q. You didn't run your boat through the rushes, did you?
A. She would run most anywhere.
Q. I didn't ask you that. I asked you if you ran your boat through the rushes when you ran in here. Did you? Why do you hesitate about that?
A. I don't hesitate; it's so long ago since I ran through these lines—are not familiar there. I can remember the old natural channel on the Minnesota side.

Mr. Gard: And he points to the channel marked on this map H.
Mr. Fryberger: If that was a point, that motion.

Q. Now then, you do, however, know, and there is no doubt about that, of the channel being used from A to G, from G to B, and from G to C?
A. As I said before, I saw small boats plying in there but I didn't know any particular depth of water. I never had any chart
890 of the river, except the old natural river.
Q. But you did see boats navigating from the channel marked E, around to F, didn't you?
A. I saw them towing logs down through there.
Q. With tugs?
A. Yes, light draft tugs.
Q. And you yourself went on the channel marked A to G and B and then to D and then south of the island?
A. I went through there with light draft boats.
Q. Boats drawing six feet or seven feet?
A. About four feet.
Q. What boat was that?
A. Stern wheeler, Henrietta.
Q. Then you did know of these different channels?
A. Channels for light draft boats; that is all.
Q. Well, did you ever strike ground there?
A. Yes; I struck ground coming down the river, too.
Q. Now you struck ground on these channels?
A. Not with the old Henrietta.
Q. What boat did you strike ground with on these channels; tell us?
A. On the old river bed the only spot we used to strike was right in here past Big Island.
Q. I am not asking you about past Big Island. I am asking you

about where you struck ground when you used these channels from A to B and on to D; you never made soundings there?

A. No, sir.

Q. Then how do you know how deep the water was?

A. I know no heavy draft boat could go in there.

Q. How do you know of your own knowledge?

A. I never seen a heavy draft boat go in there except a
891 boat drawing four or five feet of water.

Q. But you do know of these channels marked in red there?

A. Light draft boats where———

Q. They are approximately correct, aren't they?

A. Somewheres near it, I guess.

Q. You said you came over here long after Duluth went dry. When did Duluth go dry?

A. Somewhere about the 1st of July, I guess.

Q. And you came over about a month ago, you said?

A. Along the latter part of July I came over here.

Q. When did Superior go wet?

A. I don't see how that has got anything to do with this case.

Q. You answer the question, will you, please?

A. Is it proper, Your Honor?

The Commissioner: The question is really immaterial.

Mr. Gard: Answer the question.

A. I guess Superior went dry—it went wet about the first of July.

Q. Haven't you been drinking this morning?

A. I had a glass of beer this morning.

Q. You have been drinking more than beer. Haven't you been drinking whiskey this morning?

A. No, sir.

Q. How many drinks have you had this morning?

A. One.

Q. Only one?

A. Yes.

Mr. Gard: One glass of beer, was it?

The Witness: Yes, sir.

892 ROBERT MORRIN was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Mr. Morrin, where do you live?

A. Bayfield.

Q. What is your business?

A. Interpreter for the Government, Indian Interpreter.

Q. Indian Interpreter for the Government?
A. Yes, sir.
Q. How long have you been Indian Interpreter for the Government?
A. Three years, growing on four years, steady, at that place there.
2. Are you familiar with the Indians in this Northwest here?
A. Quite a few of them and the old fellows that used to be here.
Q. Know the old fellows that used to be here?
A. Yes, sir.
Q. How long have you known them?
A. Since in the '60's; some in the '50's. They made a treaty over to Madeline Island.
Q. Do you know where the Indians in the early days regarded the mouth of the St. Louis River?

Mr. Fryberger: Objected to as incompetent, irrelevant and immaterial.
The Commissioner: Taken subject to the objection, you may answer.

A. They used to call wherever we entered in there.
Q. Between what places?
A. Where the light-house is now.
Q. Between Wisconsin and Minnesota Points, you mean?
A. Yes, sir.
893 Q. They called that the mouth of the river?
A. Yes, sir. That is the translation of Zeebee, they call it, at the time I came up here in the '60's "Zeebee;" that means Big River.
Q. What does Nemadji mean?
A. Left hand.
Q. You know the Nemadji River, did you?
A. I have seen it.
Q. Did you ever go up the St. Louis River?
A. Yes, sir.
Q. When?
A. In '63 and '64.
Q. What was the occasion of your going up there?
A. Going there to pay off the Indians.
Q. With whom?
A. L. E. Webb was the agent there.
Q. Where did you go?
A. Fond du Lac.
Q. What kind of a boat did you have?
A. Had a vessel, what we used to call in them days a vessel.
Q. Do you know how big a boat it was?
A. It was a good-sized boat but I don't remember the tonnage or anything like that.
Q. Do you know how much water it drew?
A. Seven or eight feet.

Q. Have you any recollection of what course that boat took after it passed Grassy Point?

A. Well, sir, I don't know anything about them names at all. We just followed the river.

Q. Just followed the river?

A. Yes, sir.

Q. Was there a current in the river?

A. Yes, sir, quite a big current.

Q. And you followed the river?

A. Yes, sir.

Q. You know where Grassy Point is now, do you?

A. No, sir, I don't know.

894 Q. Well, didn't you call it Tamarack Point? Do you know anything about Tamarack Point?

A. No. All I recollect is Fond du Lac. I got up there and paid off the Indians and I used to hear of Connors Point and I don't know where that is.

Q. You just followed the river?

A. Yes, sir.

Q. Did you follow along close to the Minnesota shore or close to the Wisconsin shore up this way?

A. Why, very close to the shore part of the time. I can tell by the ridge.

Q. Which shore, Minnesota?

A. I suppose, it was on that right-hand side.

Q. Right-hand side as you went up?

A. Yes, sir.

Cross-examination.

By Mr. Bailey:

Q. That is when you got up by Big Island there?

A. I don't know where that island is.

Q. That is what you were talking about, up by the island, when you were close to the right-hand shore?

A. I suppose. I don't know where the island is.

Q. Are you of mixed blood? Have you got some Indian blood yourself?

A. Yes, sir.

Q. Now the mouth of the Nemadji is right down here by what we call the Superior entry, is it?

A. Yes, sir.

Q. And you say the Indians spoke of that as the mouth of the river?

A. That is the St. Louis River you call now. They call it Zeebee them days in the '60's.

Q. You don't know where Grassy Point is?

A. No, sir.

895 Q. You don't know where Connors Point is?

A. No, sir,

Q. Don't know where Wisconsin or Minnesota Points are?
A. No, sir.
Q. Don't know any of the names?
A. No, sir.
Q. And when you came up to pay off the Indians you went from the entry down here just as straight as you could right up to Fond du Lac?
A. Fond du Lac, yes, sir, on the river.
Q. How did you go, sail?
A. Well, no; row boats; had four or five row boats and men pulling the small boats, you know; had a line to the vessel, and when we got up there, if I could see that I could see it, Fond du Lac.
Q. What vessel was it?
A. It's the Mary Ann.
Q. How big a vessel was it?
A. I don't know the dimensions at all.
Q. You don't know how much water it drew?
A. I know because we used to take lumber down to Ontonagon.

By the Commissioner:

Q. Was there a deck on the vessel?
A. Yes, a deck.
Q. There was a deck and a mast?
A. Two; two big masts and three jib and gaff top-sails.

By Mr. Fryberger:

Q. You had nothing to do with running the boat?
A. Me?
Q. Yes.
A. I was a sailor. I was one of the——
Q. Just a sailor?
A. Yes.
Q. Worked as a sailor?
A. Yes.

896 Rec'd Aug. 31, 1917. D. E. Roberts, Commissioner.

FEDERAL BUILDING, SUPERIOR, WISCONSIN,
Tuesday, August 14, 1917.

The taking of testimony was resumed before the Commissioner, Hon. David E. Roberts, at the above time and place.

Present: The Commissioner, Hon. David E. Roberts.

On behalf of the State of Minnesota, Mr. W. D. Bailey, Mr. H. B. Fryberger, and Mr. Louis Hanitch.

On behalf of the State of Wisconsin, Hon. Walter A. Owen, Attorney-General of the State of Wisconsin, Mr. Horatio V. Gard, Mr. Lyman T. Powell, and Mr. T. T. Hudson.

The following testimony was introduced and the following proceedings were had, to-wit:

By Mr. Hudson: I offer in evidence Wisconsin Exhibit 48 being a copy of a patent from the United States to Emerson Chase which is certified by the Registrar of Deeds of St. Louis County, Minnesota, under date of August 9, 1917, being a record of his office recorded in Book C of Deeds, page 440. This patent purports to grant to Emerson Chase Lot number 2 of Section 10 and Lot number 2 of Section 11 in Township 48 north of range 15 west in district lands subject to sale at Portland, Minnesota.

Received without objection.

897 JAMES P. COLE was called as a witness by the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live?
A. In Duluth.
Q. How long have you lived in Duluth?
A. Forty-seven years.
Q. What is your business?
A. Tug captain.
Q. How long have you been tug captain?
A. About thirty-four years.
Q. Have you occupied any other position than captain on tugs?
A. Not in that time, no, sir.
Q. Before that time?
A. Yes, sir.
Q. What position did you occupy before that time?
A. Both decking and firing, deckhand and fireman.
Q. Do you hold a master's license?
A. I hold a first-class pilot's license.
Q. How long have you held such license?
A. Thirty-four years.
Q. To what extent have you navigated the waters around the head of the lakes?
A. Well, I have been practically at it for a good thirty years, around Duluth and Superior harbor, St. Louis River.
Q. Has all your navigation been around Duluth and Superior?
A. Pretty much all, except about four years that I put in down at the St. Lawrence River.
Q. When was that?
A. About six or seven years ago, if I remember right. I think it was 1912 I went down there.

898 Q. Have you navigated the St. Louis River to any extent above Connor's Point?
A. Yes, I have, quite a bit.
Q. When did you first navigate the river above Connor's Point, above Grassy Point, I mean?

A. My first navigation up there would be thirty-four years ago.
Q. What boat did you navigate?
A. The tug Johnny Upham, J. H. Upham.
Q. Upham?
A. Yes, sir.
Q. How much water did she draw?
A. Eight feet of water.
Q. How long did you operate her?
A. Three years.
Q. To what extent did you go up the river above Grassy Point?
A. Not a great deal at that time; probably I might have mad
eight or ten trips during the three years I was on her.
Q. Did you make a few trips each season?
A. Yes, sir.
Q. What other boats have you navigated up the river?
A. The tug F. L. Danforth, and tug Eliza Williams.
Q. Now when did you operate the tug Danforth?
A. I sailed her for seven seasons, seven years after the three year
on the Upham.
Q. And what water did she draw?
A. Eight feet and a half.
Q. To what extent did you navigate the river above Grassy Point?
A. Well, about the same as I did the Upham, probably two o
three trips a season is about all I went up there.
Q. What boat did you next navigate?
A. The tug Eliza Williams.
Q. How long did you operate that?
A. Well, I was between her and back on the Danforth fo
899 the next five years, about five years, all told.
Q. And to what extent did you navigate that boat up
above Grassy Point?
A. Just about the same.
Q. A few trips each season?
A. Yes, a few trips each season.
Q. What water did she draw?
A. Same as the Danforth, eight and a half feet.
Q. What other boat have you navigated up the river?
A. Well, I made a few trips on the tug J. L. Williams.
Q. When?
A. I don't remember exactly the time, but it must be all of ten
or twelve years ago.
Q. How much water did she draw?
A. I think she draws about nine feet. I ain't familiar with her
draught.
Q. Was the new government channel dredged at that time?
A. At that time, yes, sir.
Q. That was after the government channel was dredged at Grassy
Point?
A. Yes, sir.
Q. Now did you navigate any other boats up the river before the
new channel was dredged?

A. The Johnny Upham, the Eliza Williams and the F. L. Danforth.

Q. Did you navigate any others. Is that all?

A. That is all, yes, that I remember at the time.

Q. Did you do some dredging in the vicinity of the blast furnace up there?

A. Yes, sir.

Q. Where is that located?

A. The blast furnace? Well, it is up, what they call Pan Cake Island, I think, along in there somewheres.

900 Q. When did you do that dredging?

A. That must be somewhere around in the neighborhood of twelve years ago.

By Mr. Fryberger:

Q. Did you do the dredging?

A. No, I didn't do the dredging. I was tending to a dredge there.

By Mr. Gard:

Q. Tending to a dredge, what do you mean by that?

A. I was taking the material away from it that she was putting into the scows. I was handling the scows and dumping them.

Q. With a tug?

A. With a tug, yes, sir.

Q. When do you think that was?

A. I think it was around twelve years ago. I ain't quite sure of the date because I have been traveling around quite a bit.

Q. What did the dredging consist of?

A. They were digging the channel for the blast furnace dock.

Q. Do you know where the main channel of the St. Louis River is located at that place?

A. Yes, sir.

Q. Was that on the Minnesota side or the Wisconsin side of the main channel of the St. Louis River?

A. Minnesota side.

Mr. Fryberger: I object to that. That is the whole question in dispute. This witness is hardly competent to testify whether it is in Minnesota or Wisconsin.

The Commissioner: Go ahead.

By Mr. Gard:

Q. Mr. Cole, how far was that from the Minnesota side of the old channel of the river, that is how far in did it extend?

A. How far in was the old channel from the new channel?

901 Q. From the old channel how far in towards the blast furnace did it extend?

A. I don't get your question quite right. You mean how far is the new channel from the old channel?

Q. No, how far from the other side towards the Minnesota shore

did it extend from the old channel, the channel that you were dredging?

A. We started away out beyond the new channel and dug clean in across the old channel.

Q. You dug from the new channel——

A. Right in across the old channel clean in to the further end of the dock.

Q. And how far was the dock built out at that time?

A. It was built out pretty close—quite a ways from the new channel?

Q. Did it go out as far as the old channel?

A. It crossed the old channel entirely.

Q. Could you tell where the old channel was?

A. Yes, sir.

Q. How?

A. By reeds growing up, rushes. The only land mark we had on it.

Q. Where did you dump your dredge loads?

A. I dumped in the old channel.

Q. You say that was after the new channel had been dredged?

A. Yes, sir.

Q. In your navigation of these boats that you speak of, that you navigated prior to the time the new channel was dredged, what course did you take going up the river after you passed Grassy Point?

A. I swung right in around Grassy Point right in around on the shore clean up to Spirit Lake and then when we got to Spirit Lake we headed out toward Big Island and followed Big Island up
902 around to what we call the Wisconsin shore along until where they built a bridge up there.

Q. At New Duluth?

A. The Steel Plant bridge before we got to New Duluth. There is another old bridge above that.

Q. So after you rounded Grassy Point how did you run?

A. Down along toward the shore, toward the shore line.

Q. Minnesota or Wisconsin shore?

A. Minnesota, turn to your right around the corner, down about to where the Carnegie dock is now, and the Island Creek.

Q. Was there a channel in the river there?

A. Yes, sir.

Q. Did you follow the channel?

A. Yes, sir.

Q. How did you follow it?

A. By the rushes growing up on both sides.

Q. Did you ever navigate it in the spring before the rushes came up?

A. I don't remember that I did. No, sir, I think not.

Q. After the rushes came up they marked the channel, did they?

A. Yes, sir.

Q. Is that the channel that you filled up when you were tending the dredge on the Zenith Furnace Company dock?

A. Yes, sir.

Q. Did you see other boats navigating that channel?
A. I did.
Q. Was there another course that light draught boats took?
A. Yes, sir.
Q. Where was that?
A. That was up above the island, what they call the Cut-off.
Q. Southerly of Big Island?
A. Southerly of Big Island, yes, sir.
903 Q. That was known as the cut-off channel?
A. The cut-off channel, yes, sir.
Q. The other was known as what?
A. The main channel.
Q. The main channel?
A. Yes, sir.
The Commissioner: You say it was known as the main channel. Among what class of people was it known as the main channel?
Witness: By all the tug men, as far as I know.

By Mr. Gard:

Q. Was there a current in the channel there?
A. Yes, sir.
Q. I show you Wisconsin Exhibit 29 and ask you if you ever saw that before?
A. No, sir, never saw that before.
Q. Now this purports to be a map of the waters above Grassy Point. You see where Grassy Point is located, do you?
A. Yes, right over here, Grassy Point.
Q. Do you see the island that you speak of? Have you located the island that you spoke of, that is nearly opposite the Zenith——
A. It is there.
Mr. Gard: Witness points to an island opposite the upper slip as marked on this map.
Q. That is right, isn't it?
A. Yes, sir.
Q. Now after you passed Grassy Point what course did you take?
A. Came right up through the West Duluth bridge and right up around the Point. It seems as though we were closer to the Point. I think there is quite a flat in here.
Q. You came closer to the point?
A. It looks to me as though it was closer.
904 Q. Then what course did you take?
A. Turned right around to the right and came right up around in here by the Island Creek.
Q. Well, now you are pointing to the point that is shaded yellow on this map?
A. Yes, exactly.
Q. Did you follow that course?
A. Yes, right up to Spirit Lake, wherever Spirit Lake is.
Q. Now there is Spirit Lake. You see Big Island?
A. Yes, Big Island here.
Q. Now study that map a little and see what course you took after

you passed the blast furnace for instance. Do you locate the cut-off?

A. Not very well. We used to shoot across from this island here to the cut-off.

Q. When you took the cut-off?

A. Yes, that is the way I used to go. I used to head towards this island and shoot across here to the cut-off.

Q. You mean the island that is opposite the second slip, that is the upper slip?

A. Yes. Where is this slip to the blast furnace? Well, this is the island anyway, this first island after you pass Grassy Point.

Q. And in making the course to the cut-off you say you went up near that island?

A. Yes, near the island, and cut across in here.

Q. Southerly of Big Island?

A. Southerly of Big Island, yes, sir.

Q. What channel above Grassy Point was used by heavy draft boats principally?

A. This old channel.

Q. By old channel you mean the channel marked on this map, yellow?

905 A. Yes, sir.

Q. But lighter draft boats used the cut-off?

A. Well, they all went this way unless they were in a hurry, and then they took the chances in the cut-off. If they were in a hurry they took the chances. But I got on the bottom; very often she would lay down on her side, nearly every time she went through. If she had a tow we couldn't make it, we always had to go around the main channel, around Big Island.

Q. Northerly of Big Island?

A. Yes, sir.

Q. To what extent did you encounter current in the channel of the river, in the vicinity of Grassy Point?

A. Well, I should judge there must have been from two to three miles of current there.

Q. An hour, you mean?

A. An hour, yes, sir. Of course there is more sometimes. You take it when the wind is blowing northeast and of course that used to back the water up with it so sometimes the current was swifter than others.

Cross-examination.

By Mr. Bailey:

Q. What did you use the tug J. H. Upham for, what kind of work were you doing?

A. Dredging.

Q. Dredging?

A. Yes, sir.

Q. Practically all the work you did with that was dredging?

A. Well, occasionally we used to take rafts, sometimes take a scow loaded with supplies up there to fellows logging up there.
Q. What did you use the tug Danforth for?
A. Same purpose.
Q. What did you use the tug Eliza Williams for?
A. Same purpose.
906 Q. What did you use the tug J. L. Williams for?
A. Towing cedar with to New Duluth.
Q. But the tug Williams you didn't use until about twelve or thirteen years ago?
A. No, sir.
Q. So the first three tugs you operated on you used almost exclusively for dredging?
A. Yes, sir.
Q. Who were you working for at that time?
A. Williams & Upham.
Q. Did they have a government contract?
A. Yes, sir.
Q. Where were they dredging?
A. We had government contracts all through Duluth harbor, and some up above the Interstate bridge, where the Interstate bridge is now.
Q. Where the Interstate bridge is?
A. Now, yes, sir.
Q. What do you mean, the Interstate bridge?
A. One between Connor's and Garfield Avenue.
Q. Well, then when you speak of the Duluth harbor in that connection you mean Superior bay, that is, whatever is easterly of Connor's and Rice's Point?
A. Yes, sir.
Q. And most of your work was there?
A. Most of the work was there, yes, sir. Oh, we ran quite a bit between that and the West Duluth bridge.
Q. That is you mean by the West Duluth bridge the Northern Pacific bridge?
A. No, away up above. There is the Interstate bridge, a railroad bridge, that is the Northern Pacific, and then there is one away above, this side of Grassy Point.
Q. You used to go up there some?
A. Yes, sir.
Q. Mostly this side of that bridge?
A. All on this side.
907 Q. So you never dredged above the Northern Pacific bridge that ran from Grassy Point across to Wisconsin?
A. Only what was done at the blast furnace.
Q. That was within the last twelve or thirteen years?
A. Yes, sir.
Q. And where you hauling that stuff with the first three tugs?
A. The majority of it went out into the lake.
Q. Where did the rest of it go?

A. Spread along most anywhere, where we could get in on that scow.

Q. But none of it was hauled up above Grassy Point?

A. No, sir.

Q. And so these trips that you made occasionally up above Grassy Point they were just pleasure trips, or something like that, I mean with the first three tugs?

A. No, sir, always go up on some business. We took up a few boom sticks, or a scow-load of provisions or something of that kind.

Q. But only once or twice a year?

A. That is all.

Q. And you don't remember definitely how many times but it was very seldom?

A. Very seldom, because they kept me busy down in the harbor all the time.

Q. And you don't remember, I suppose, what time of year it was that you made these occasional trips you speak of?

A. No, but it was somewhere along in the middle of the season as a general rule or it might be what you call early in the fall, but the rushes was always up anyway when they sent me up.

Q. You never tried to go through any channels except these two that you speak of, one hugging the Minnesota shore and the other what you call the cut-off?

A. Yes, that is all.

908 Q. So you didn't test the depth of the water anywhere else?

A. No, sir. I used to get on the bottom quite often.

Q. You used to get on the bottom up above Grassy Point?

A. Yes, it was a bad place; if you didn't watch out you would get aground.

Q. So you have been on the bottom in following this course on the Minnesota shore?

A. Yes, if you got too far out on the edge of the channel.

Q. Have you been stuck there sometimes?

A. No, I wasn't very much more than in when I would get off.

Q. Now you say when you were taking the cut-off you would go from Grassy Point straight up to Pan-Cake Island?

A. I used to shoot generally right along after we make this turn. We always had to make this turn.

Q. Right at the end of Grassy Point?

A. Yes, sir.

Q. And then your usual course was straight for Pan-Cake Island?

A. Right at that corner.

Q. The northeast corner?

A. Yes.

Q. And you would go up right opposite the island?

A. Yes, sir.

Q. But so far as you remember you never tried to go up from the northeast corner of Pan-Cake Island over to the Minnesota shore?

A. No, sir.

Q. You never tried that?

A. No, sir.

Q. You don't know whether boats ever tried to go over there or not?

A. I never saw any in there, no sir, not around in here.

909 Q. You of course have seen them come up to that point and then take the Cut-off?

A. Yes, sir.

Q. And I suppose you never paid any attention as to whether some of them, instead of taking the Cut-off, would go on to the north channel?

A. No. We would hardly ever meet anybody up there.

Q. But you were hardly ever up there at all?

A. No, sir.

Q. So that you never paid any attention particularly?

A. No, sir.

Q. Now counsel asked you if there was a current in the channel you took. As a matter of fact, there was a current both ways up the river clear to Fond du Lac and through the bays there, as well as down, isn't there?

A. I never struck any current going up, no sir; no current going up the river.

Q. Well, you know it is a fact that there are tides in the bay?

A. Yes, in the bay, but not after you pass Grassy Point; you don't find it up there.

Q. You mean the water does not rise after you get above Grassy Point?

A. The water rises, but the current never goes up the creek; I never found it.

Q. Where does the water rise from—from the lake, doesn't it?

A. Yes, she backs up all right with a northeast breeze, but I never found any current going up the river, not above Grassy Point.

Q. But you were not up there very often?

A. No, sir, but any times I have been there, I never happened to find it.

Q. The current runs up as well as down the river, you know that?

A. The current was always coming down any time I went up, and I have been up when it was blowing northeast, but the wind wouldn't be stronger than the current.

910 Q. Well, you know as a matter of fact that the waters do rise clear up to Fond du Lac?

A. Yes, they rise, certainly.

Q. That logs float up stream as well as down, on the lake current?

A. I have never seen them. When they get out of the main channel, why then they will scatter, of course, and get in the eddies. There is eddies in all rivers.

Q. You don't know what the depth of water was, that is, whether it was high or low, when you happened to make your trips?

A. No, sir. I know there was always water enough for me to go by the main channel and that is all. I never took any soundings any more than we had a 10 or 12 foot pike pole, and when it got dark we would feel our way, and when we touched bottom we would sheer off.

Q. You don't remember, I suppose, when you made your first trip up above Grassy Point?
A. The first trip I made was on the Johnny Upham.
Q. You don't remember when, I say, exactly?
A. Well, let me see; that would be 34 years ago, when I got my first issue, first license. She was the first tug I sailed.

Redirect examination.

By Mr. Gard:

Q. You say you used a pike pole there at night?
A. Yes, sir.
Q. You did come down at night sometimes?
A. Very seldom.
Q. A few times?
A. Well, probably once or twice, but you never would catch me above Grassy Point in the dark.
Q. Explain how you used the pike pole?
A. I would, as soon as it got dark, I would have a deckhand go at the side of the tug and feel with a pikepole, and as soon as he would strike bottom we sheered off.
911 Q. Were you coming down in the channel?
A. Coming down in the channel, yes, sir.
Q. And you were watching for shallow water at the side?
A. Yes, sir.
Q. Did you find quite deep water in the channel?
A. Well, more than our pike pole would reach.
Q. How long was your pike pole?
A. We used to carry them generally from 12 to 16 feet.
Q. Now you say you have been on the bottom. Was that in the channel or when you got out of the channel?
A. No, when I got out of the channel.

Recross-examination.

By Mr. Bailey:

Q. The pike pole was about how long?
A. Well, we used to carry them generally from 12 to 16 feet.
Q. It would be about five feet from the top of the tug to the water?
A. Yes, just about.
Q. And I suppose you would just drop it down as you stood there?
A. Just drop it down as he stood there.
Q. Now the Upham didn't draw quite as much water as the others?
A. No, sir.
Q. Probably a foot or two less?
A. No, there wasn't much more than six inches less than the Danforth. She was a long legged little tug.
Q. You didn't use the Danforth until pretty nearly '90, did you, about 1890?

A. Well, it would be somewheres along in there.

Q. You say you probably did not go up the river above
912 Grassy Point up to Fond du Lac or up anyway above Grassy Point until after 1890, with the Danforth, I mean?

A. No, sir, not with the Danforth. I was three years on the Upham.

Q. Well, you said you were seven years on the Danforth?

A. Yes, sir.

Q. And it may be possible that you didn't go up with her until two or three years after you had her?

A. Yes, I used to make a trip generally once or twice a season.

Q. But you don't remember particularly about that, do you?

A. No, sir, I do not.

Q. Now with that tug I presume you couldn't go across a place that was less than eight feet in depth?

A. No, sir.

Q. Or one that was less than eight feet and a half?

A. Well, I have had her in less water than eight feet and a half.

Q. Stuck?

A. No, pounded right through.

Q. Well, the tug draws eight feet and a half?

A. Yes, sir.

Q. How could you get through in less than 8½ feet?

A. Soft bottom, soft mud, we could pound her through. She would roll down on her side but we could pound her through. There was lots of times running around in them years we never noticed it when she was on the bottom; as long as we knew there was deep water ahead we made her climb.

Q. So you think you could go over eight feet?

A. Yes, soft bottom.

Q. Go over less than eight feet?

A. No, I wouldn't want to tackle less than eight feet, not on any distance.

913 By Mr. Fryberger:

Q. Now, as I understand it, you never found any bar at all in what you call the old channel, that interfered with your navigation?

A. No, never did.

Q. You never found less than 12 to 15 feet of water if you kept in the channel?

A. No, sir, never did.

Q. That is, going up around, as you term it, where the Carnegie Coal dock is and the Zenith Furnace Company?

A. Yes, sir.

Q. And there was no point had ever less than 12 to 15 feet of water?

A. No, sir, not if we kept in the channel.

Q. You found no place that had only eight feet of water when you navigated?

A. No, sir.

Intermission of ten minutes taken.

914 J. H. DARLING, was called as a witness by the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Hudson:

Q. You live in Duluth?
A. I do.
Q. And you have lived there for how long?
A. Since '84, that would be about 33 years.
Q. What has been your business during that time?
A. During most of that period my business was that of an engineer in the employ of the United States government.
Q. In what capacity?
A. As principal assistant engineer on the work of harbor improvements in the Duluth-Superior harbor and in the other harbors of the Duluth district, so-called, extending over a large part of Lake Superior.
Q. You have been located all the time here at Duluth, have you?
A. Yes, sir.
Q. And during the time that you have been so located and engaged in that capacity, there have been a number of chief engineers, in charge of the work?
A. Certainly.
Q. Just what are your duties in relation to any improvements that are made, any improvements of the harbor, what have been your duties?
A. I have been a sort of superintendent or supervisor in the preparation of plans for improvements and also have looked after the execution of improvements in many cases, with the assistance of other engineers under my direction, and inspectors.

915 Q. When an improvement is actually under construction, are you out on the work any part of the time, or is that done by inspectors under your direction?
A. It is generally looked after directly by inspectors under my direction and at the same time I was on the work, I made visits to the work, kept the work under my eye and watched so that I was constantly familiar with what was going on. Of course, during the last three or four years I have been out of the government employ.
Q. You have retired?
A. I have now retired, yes, retired in the fall of 1913.
Q. Are you familiar with the waters of the St. Louis River say above Grassy Point?
A. Yes, I am.
Q. How long have you been familiar with those waters?
A. During the entire period of my residence in Duluth.
Q. Have the improvements that have been under the direction of this office here been conducted up the river for any great distance, for a number of years, how far up the river?

A. The farthest extent of the government improvement up the river is at New Duluth where the government removed a tow above the old railroad bridge, the Winnipeg bridge, between that and Commonwealth Avenue. That is the farthest the Government has made improvement.

Q. Do you know what course the navigators took up the river before the present new channel was dredged known as the Minnesota channel?

A. Yes, sir.

Q. How long have you been familiar with that?

A. I have been familiar with it during all of these 33 years.

916 Q. Is there more than one deep channel between the island and the Minnesota shore, is there more than one deep channel?

A. No, sir, not originally, not before the improved channel was made.

Q. Was that deep channel between the Big Island and the Minnesota shore a continuous channel clear up to New Duluth?

A. Yes, it was continuous from Grassy Point up.

Q. From Grassy Point to New Duluth. Was that channel at the time the new channel was dredged through in practically the same location as it was in '84 and '85 when you first became familiar with it?

A. Yes, it had remained unchanged in its position and location during all the time I have been here up to the time of the construction of the new channel.

Q. Was that channel sufficient to carry boats of large draught?

A. Why it was—draught which could be carried was not what we call large draught, compared with the lake steamers.

Q. How deep draught boats?

A. I think the draught up there was limited, before the shoals were removed, was limited to perhaps eight or ten feet. It might have been even a little less than that over some of those bars.

Q. Were there bars removed?

A. There were bars removed at one time in the '90's; I don't remember the exact year although I attended directly to that work.

Q. And the purpose of removing them was what?

A. To add greater draught of vessels using that channel and allow the business of transporting lumber and cedar poles and so forth.

Q. From what point?

917 A. Down the river from New Duluth and to facilitate passenger traffic, whatever traffic there was up that way.

Q. The first improvement then that was done to the river above Grassy Point was in cutting out some bars in the old channel, is that right?

A. That is true, yes, sir.

Q. Do you know how many bars were cut out?

A. I remember five of them now.

Q. And those were bars in the old channel?

A. Yes, sir.

Q. They were removed for the purpose of permitting boats of larger draught to continue up the old channel?

A. That is the idea.

Q. As I understand all of the boats of larger draught that went up the river previous to that time followed that old channel?

A. Yes, sir.

Q. Now, Mr. Darling, when were the first changes made of navigation from the old channel, was it at the time this new so-called Minnesota channel was dredged in 1902?

A. Yes, sir.

Q. That was the first time there were any changes made——

A. Yes, sir.

Q. —from the old channel. Prior to that time all the work the government did was in improving the old channel, was it?

A. Yes, sir.

Q. That is from Grassy Point up to New Duluth, is what the inquiry is being confined to.

A. Yes, that is what I meant to say.

Q. Well, there is a channel east and south of Big Island?

A. Yes, called the Cut-off.

918 Q. Did any navigators take that?

A. Yes, such vessels as had light enough draught to go through there would always take it to save distance.

Q. Mr. Darling, you are familiar of course with these maps. I will refer you to Wisconsin Exhibit No. 1 and ask you to examine that and point out the old channel that you refer to, and that you have just described in your testimony, above Grassy Point.

A. The channel ran along this course.

Mr. Hudson: Witness points to a channel with the letter "H" in red on it, up to a point beyond letter "H."

A. Running along there.

Mr. Hudson: Witness points the old channel as shown on the Meade map Wisconsin Exhibit 1 curving in a westerly and southerly direction from H to a point immediately north of Big Island.

Q. Now you may mark that with a red-ink pen commencing at the foot of Grassy Point.

A. Right in here?

Q. Yes, run it as far as you are familiar with the channel.

Mr. Hudson: Witness indicates channel with red ink.

Q. Now, you have marked on the Meade map Wisconsin Exhibit 1 with a red-ink pen, you have marked a red line on what you have described as the old channel of the St. Louis River?

A. Yes, sir.

Q. And where you have said the boats of larger draught usually followed in conducting commerce and navigation up the river?

A. Yes, sir.

Q. And that is the course which you say is the only channel between Big Island and the Minnesota shore?

A. Yes, sir.

919 Q. That boats of any considerable depth could take?

A. Yes, sir.

By the Commissioner:

Q. The channel extends from Grassy Point to what point?
A. To Fond du Lac.

By Mr. Hudson:

Q. Mr. Darling, you said that the location of that river from Grassy Point up this direction has not been changed since you have been here, or was not changed from the time you came here until the time this Minnesota channel was cut through?
A. There has been no sensible change.
Q. Is the bed of the river practically the same?
A. May I ask what you mean by the bed of it?
Q. Well, I mean the bottom of the river is practically the same depth.
A. I think it remained practically unchanged up to the time the government removed those bars in about the year 1893.
Q. Well, since the bars have been removed was there any change in it except what was made by the government?
A. No other changes that I know of, except such natural changes as occurs from a re-shoaling of the bars, which always follows after dredging, to a certain extent.
Q. What is the formation of the land under the water between Big Island and the Minnesota shore and between the Wisconsin shore and the Minnesota shore all the way up?
A. The material varies; some of it is sand, pretty hard sand in places, some of it is clay and mud; there might have been some gravel. I don't remember all the details.
920 Q. Well, is that washed from the river?
A. I take it that scattered material is deposited from the river.
Q. And does it come to deposit along in that broad expanse each side of the channel?
A. In the natural course of a river floating through a delta or through a flat stretch of ground and through swamps, the material in suspension which is carried by most rivers, and more or less by all rivers in times of floods, is dropped along the channel or in the vicinity of the channel where the water is most quiet.
Q. That is where the water is sluggish?
A. That is where the water is sluggish.
Q. What do you mean to say about the way a channel in the river is made?
A. Then during the process of deposit of light material the river always maintains more or less current, a current that discharges through some portion of these flats or shallow waters which it passes, and this velocity of discharge prevents deposits along that course and so it maintains the channel unobstructed.
Q. Then a channel is formed by the course of the water where the current is more rapid?
A. That is true. I might say also that in such a channel there

are other deposits forming bars which always occurs. A river in such a locality is never straight for any great distance but always has a curving course, and it changes its curvature from one direction to another, and it is a fact in the hydraulics of rivers that in such a curving course the current of the river takes up material on the curves on account of the concentration of velocity, and drops that material at what is called the crossings, or those parts of the
921 channel where the curvature changes from one direction to another. That is the universal rule of rivers and this material it picks up is sometimes of a rather substantial character, sand and even gravel. This occurs, this scouring, at the time of floods and that is independent of the deposit of the lighter material in the flats outside of the main channel.

Q. Where do you find the deepest water in a river?

A. At the curves in the channel and on the outside of the curves.

Q. Then as you have described at certain places at the ends of those curves there is a deposit?

A. Yes, at those points between the two curves where the direction of the river changes there is always a slacking up of the current at those points and it allows some of the material to drop.

Q. You have described the old channel in this river. I will ask you to state whether it has all the characteristics of a river, this old channel.

A. Yes, this channel which I have been speaking of I should say had the usual characteristics of a river.

Q. Have you always regarded it as a river?

A. I have.

Q. You have always regarded it as a river?

A. Yes, sir.

Q. You were at all times familiar with the soundings that were made up above Grassy Point in the channel and other parts of that territory, weren't you?

A. Yes, sir.

Q. Kept in close touch with them?

A. Yes, sir.

Q. And have been familiar with all the soundings all
922 the time since 1884?

A. Yes, I have.

Q. Whenever new government maps had been gotten out relating to improvements in the river and harbor up to four years ago, you have had them under your direction, haven't you, and supervision?

A. I have either had it under my own direction or have been familiar with the work of others. I might say in this connection that there is one very important survey made of which I had no charge whatever; that was in the winter of '84-5. It was made by the Assistant Engineer a man by the name of Parkinson who worked under the direction of the Engineer's office at St. Paul.

Q. Who was in charge of the St. Paul office?

A. Major Charles J. Allen.

Q. It is the Allen map of '84 that you didn't have direct charge of?

A. Yes, '84-5. I was here at that time in Duluth under the direction of the St. Paul office, which at that time was in charge of the Lake Superior District, and I had my own duties at that time. That was before there was a government station at Duluth, and as I said, Mr. Parkinson was sent up from St. Paul to make this particular survey of St. Louis River. I was quite familiar with the work that was going on that winter of the survey, I was well acquainted with those who did it and saw them frequently, and kept in close touch with their operations.

Q. Mr. Darling, will you step here. I show you now Wisconsin Exhibit 31-I and will ask you to explain the stipulation that is made on this exhibit, which reads as follows: "It being understood that no encroachment on the present natural channel will be
923 permitted until after artificial channels have been provided where necessary." Will you explain what that meant, what it referred to?

A. That refers to the establishment of harbor lines on the St. Louis River and bay and elsewhere.

Q. A matter of a proposed channel?

A. Yes, a proposed channel. It was established part of the distance and the proposed harbor line which is shown on this exhibit happens to cross the natural channel of the St. Louis River which we have been talking about.

Q. At what point?

A. At several points one of them being near Grassy Point.

Q. Will you describe how far from Grassy Point?

A. Within a few hundred feet of the westerly side of Grassy Point. That was one point where it crosses the river's natural channel.

Q. And what direction does the channel take where it crosses it, the original channel?

A. The channel has a direction of something like, running southeasterly. The harbor line passes westerly across the channel line.

Q. Is the channel indicated on this map?

A. The channel is.

Q. How is it indicated?

A. I think by fine dotted lines.

Q. Is that the same channel which you marked red on Wisconsin Exhibit 1, the Meade map?

A. It is the same channel.

Q. Will you state where this dock line crosses that channel westerly of this point which you have described?

A. The next point is westerly a few thousand feet, a little west of an island which I believe is called Armstrong Island, at a
924 point south of the blast furnace.

Q. At that point where the dock line crosses the channel, which side of the dock line then is the old channel?

A. After it crosses at the point just mentioned the dock line is on the north side of the natural channel.

Q. Does it follow fairly close to the natural channel?

A. It does for a distance of perhaps 500 feet or so north of the natural channel.

Q. At what point does it again cross the natural channel, I now refer to the dock line on the Minnesota side.

A. Some two or three thousand feet further west.

Q. And what direction?

A. North of the northerly point of the dock line is where it crosses the natural channel again.

Q. Is there a change of direction of the dock line that is in use?

A. Yes, the change is marked 54 here.

Q. What course does the natural channel take then with reference to the proposed dock line?

A. The natural channel runs in well towards the Minnesota shore.

Q. Well, is there some notation that you can show?

A. Near a point where there is a government station marked 134.

Q. How far does it continue in that course, I mean from this point there.

A. The channel continues upward and along near the Minnesota shore for a distance of two thousand feet or more from the last crossing and then the channel is crossed again by the harbor line.

Q. Where is it crossed by the harbor line?

925 A. Here at a point marked 156.

Q. On the harbor line?

A. On the harbor line.

Q. Is it the channel which you have last described north of the island?

A. Yes, sir.

Q. Between the Wisconsin and Minnesota shore?

A. Yes, sir.

Q. You may continue and state where the channel again crosses.

A. The course of the channel going upstream then comes further eastward toward Big Island on a gentle curve and then swings back to the Minnesota shore again.

Q. Whereabouts does the harbor line next cross?

A. It next crosses at a point about midway between Big Island and Minnesota.

Q. And near what point on the dock line?

A. Near point number 58 on the dock line.

Q. What direction from that number?

A. That crossing is 200 feet north of that number.

Q. Well, you may state the course of the channel with reference to the dock line.

A. The channel then runs very close to the Minnesota shore near Ironton.

Q. Do you know where the Spirit Lake dock is, the dock at Spirit Lake?

A. Yes, the old Spirit Lake dock.

Q. Can you describe the channel with reference to that?

A. The channel runs up close to that dock. That is not far from the government point 137.

Q. On that exhibit?
A. Yes, sir.
Q. Then from the Spirit Lake dock what course does the channel then take?
A. The channel then swings around—
926 Q. In what direction?
A. Southeasterly towards Big Island again.
Q. And where is it crossed by the dock line?
A. It is crossed by the dock line close to a point number 60 on this map.
Q. What is point number 60?
A. Point number 60 is an angle in the harbor line.
Q. Then what direction does the channel take with reference to Big Island?
A. The channel continues easterly and takes a gentle curve up the St. Louis River passing close to Big Island again.
Q. That addenda I called your attention as a stipulation, what does that mean?
A. That is a provision made by the Engineer's office to prevent the making of improvements by docks or any other filling on the bed of the old channel inside, that is between the proposed harbor line and the main land of the Minnesota shore, which would prevent the use of that natural channel until the time the government provided a new channel outside of the harbor line.
Q. That was to prevent, as I understand you, persons improving out to the new dock line across the old channel, was it?
A. Yes, exactly.
Q. What was the idea?
A. The idea was to keep it open for navigation until the new channel was provided so as not to interrupt with traffic on the river.
Q. Do you know whether or not the island that you referred to as Armstrong Island is the same as Pan-Cake Island, or Snowshoe Island?
A. I don't remember those other names.
Q. Well, do you remember whether it was one that was
927 patented by the government in late years, and afterwards was taken back by the government.
A. It was surveyed and patented by the government since I was here and then the government established a harbor line and made the improved channel and then when this improvement was undertaken we had to cut through that same island.

Cross-examination.

By Mr. Hanitch:

Q. When did they build the canal at the Sault?
A. The first locks were completed about the year 1855.
Q. How much water did they have at that time at the Sault when the first lock was built?
A. I am not sure as to that, but I should think it might have been

twelve feet or so. It was a double lock with much less water in it than the recent locks have.

Q. Much less—

A. Much less water.

Q. What was the depth of the water the other locks had at the time they completed the locks you speak of?

A. In Mud River for instance? I don't remember Mud River but St. Mary's River generally speaking had large depth of water, had considerable depth, could accommodate quite large vessels.

Q. After the locks were completed or prior to that?

A. Prior to that time, and since.

Q. It was testified to here by Colonel Hayes, I think, that in '54 or '55 they had to carry a vessel of any size across that river, or that portage, by rollers.

A. That is at Sault Ste. Marie, at the rapids you refer to?

Q. Yes.

A. Yes, sir.

928 Q. Well, where these locks were, in the rapids, weren't they to take care of the low water in the rapids?

A. They were to avoid the rapids; the locks were alongside of the rapids.

Q. But they were to give a depth of water that you didn't have prior to 1854 or '55, weren't they?

A. Well, that wouldn't be just the situation. It was to avoid the rapid current of the rapids which prevented them running boats up over them. There might have been enough water in those rapids to run boats but there were too many rocks to navigate anything but a canoe perhaps.

Q. Well, it was rather dangerous to navigate them with a canoe, wasn't it?

A. Yes, sir.

Q. But it would be ridiculous to attempt had there been enough water to navigate a boat?

A. There would be enough water as I understand it but the current would not permit it.

Q. When you are asked if a ship can come up waters would you refer to waters that are navigable or are unnavigable?

A. I would refer to navigable waters.

Q. There were not navigable waters at the Sault prior to the building of the canal?

A. That is right but what I was getting at was that it was not lack of depth over the rapids but of current.

Q. But it was impossible on account of navigable depth, wasn't it?

A. On account of the rapid current. Possibly there was as much water over those rapids as there was in the locks after they were built but the locks allowed a still pool of water for the vessels to run into and then it is lifted by a process of locking to another

929 still pool above, and so on up.

Q. Don't you know that it wasn't the current but it was the rocks that were in the current that made it unnavigable?

A. Possibly rocks do, but the current I think——

Q. Don't you know that it is dangerous even for an Indian canoe, that it is the rocks in the current that make it dangerous?

A. I think the current itself would be a still greater impediment to any transfer of a boat up those rapids, to say nothing of the rocks in the channel.

Q. Now do you think they were completed in 1854 or '54?

A. Yes, they were built in the years 1853-55, completed in '55.

Q. Prior to that time there would be no boats of substantial depth on Lake Superior and its tributaries, except the boats were built at some point on Lake Superior?

A. Possibly. Of course they transported small boats up there, and they did have a small lock on the Canadian side.

Q. Do you remember what depth that gave?

A. I don't remember the depth but I have seen articles on it and seen pictures of it, and I have seen the site itself where that was built by the Hudson Bay Company, if I remember right, to help them get their boats past the rapids.

Q. Now you say the government in '93 I think you testified, began to deepen this channel up the St. Louis River to accommodate commerce?

A. Yes, sir.

Q. That is, to enable boats of large draught to go up the river?

A. Yes, sir.

Q. How much or for what length of time prior to 1893
930 would you say that more depth of water was needed?

A. I couldn't say as to that. I should say that it was very badly needed even at the time this improvement was made, but the government aims to anticipate the needs of commerce to a certain extent, for the encouragement of industries and traffic on channels of this kind up the St. Louis River.

Q. To what depth did you dredge those bars?

A. My recollection is that we dredged them to a depth of 16 feet.

Q. Do the maps show what the depth of water was over these bars prior to that time?

A. I think they do. My recollection as to the depth of the bars is not very definite.

Q. Mr. Darling, will you come and look at Wisconsin Exhibit 31-E, looking at a point in what you designated as the old channel and which is about northwest of Armstrong Island, as you designated it, and which others have called Snowshoe or Pie Island. Now what depth did you get there in the old channel?

A. There is a depth, the lowest depth of apparently near 8 feet.

Q. How much under 8 feet?

A. To be exact 7.9.

Q. Now this is described as the St. Louis River from Grassy Point to Fond du Lac from surveys made under the direction of Captain W. L. Fisk in April and May, 1891, by J. H. Darling, Assistant Engineer, assisted by F. L. Dean. Now this is one of your maps isn't it?

A. Yes, sir.

Q. And at that time the depth of water in the original channel was only possibly a trifle under 8 feet?

A. That is at a low stage of water, what we call low water.

931 Q. We will call that then at the lowest stage of water, is that right?

A. Yes, sir.

Q. And how long does the lowest depth of water stay in the St. Louis River?

A. Well, it is pretty hard to answer that, but I know the lowest stage of the water is early in the spring and late winter.

Q. Well, is it not during navigation period, the lowest depth?

A. The depth increases during navigation period up to about the first of September.

Q. And early in the spring would you say it might be as low as that during navigation period?

A. Yes, sometimes it goes a little below, and sometimes not quite as low as that.

Q. Now then up to 1891 would it be fair to say that boats drawing more than 8 feet of water would have difficulty in using that channel?

A. Yes, I should say so.

Q. I think you testified that boats with small or slight enough draught used the cut-off channel?

A. Yes, they did sometimes.

Q. Well, what would induce them to use that channel?

A. A saving in distance.

Q. So that if the depth of water was sufficient the boats would always use the cut-off channel, would they?

A. They would generally, I should think, but there is one other fact which might have a bearing on that. There is a very sharp bend in the cut-off channel at one point which might bother a long vessel in making the turn.

932 Q. But would you not say that exclusive of any question of turns that the boats would always take the shortest channel if they had the depth of water?

A. I should say so, that is boats bound up the river.

Q. Now the State of Wisconsin was admitted and its boundary fixed I think in the year 1849, or 1848. Have you any information as to whether these waters were navigated by anything but canoes as early as that?

A. I am not familiar with the history of the navigation back in that period.

Q. You came here in 1884, I believe?

A. Yes, sir.

Q. Prior to 1884 would you say there was any commerce up the river that would require a depth of more than that which was given by the short-cut, or cut-off, except as that short turn might prevent it?

A. Why, I cannot say as to that very definitely, I know there is a shallow portion of that channel down near Armstrong Island that is hard to get over with an ordinary tug.

Q. An ordinary tug as far as draught is concerned? What would you call an ordinary draught?

A. Well, a vessel drawing six feet. We used to sometimes cross there in one of our government boats and rub the bottom and stall for a little while and I have known one of the harbor tugs getting on the bottom there plowing her way through the mud sometimes, with her wheel working right in the mud.

Q. As I understand you or understand the effect of your testimoney it is that prior to 1891 there was no need, so far as commerce was concerned to have the channel exceeding about 8 feet in depth, that is having in mind now your map of 1891?

A. Well, I wouldn't say that there is no need of a greater
933 depth because with a greater depth than that original depth larger loads of lumber and cedar poles could have been brought down the river from New Duluth, any point up the river.

Q. But commerce was pretty well satisfied prior to that time with the draught of 8 feet, wasn't it?

A. I wouldn't say that even because there was considerable demand for this improvement that was made.

Q. What depth of water would you say that the tugs first caring for commerce up the river drew?

A. Up the river there?

Q. That is before these improvements and before your time, say, or about the time you came here.

A. The boats of course had to be adapted to the channel. They only ran boats up there which had the depth of draught which could be accommodated by the existing channel. That is about all there is to that. There is so much water up the river and boats that do not draw more than that could go up and do business.

Q. Well, were they using any tugs that drew more than 8 feet of water prior to 1884?

A. Oh, yes, I think there were tugs drawing ten feet in the harbor.

Q. That is in the bay of Superior?

A. The Bay of Superior and St. Louis Bay.

Q. In the '50's do you know whether they were running boats here that drew more than 8 feet of water, I mean tugs?

A. No, I don't know, but I should presume not.

Q. You presume not?

A. From my recollection of the original depth of the Superior entrance.

934 Q. What was that original depth?

A. My recollection is that it was something like 9 feet over the bar.

Q. 8 feet?

A. It might have been 8.

Q. Would tugs in the head water draw the full depth of that bar would you say?

A. What do you mean by that?

Q. If the depth across the bar as it naturally exists was 8 feet

would you say there were any tugs here that were drawing as much as 8 feet at that time?

A. Oh, I couldn't say as to that. Of course there might have been tugs drawing more water inside the harbor, tugs which did not go out into the lake. I couldn't say whether there was or not at the time of the cutting of the Duluth canal.

935 JAMES P. COLE, recalled for further cross-examination:

By Mr. Fryberger:

Q. Mr. Cole, You spoke in your direct testimony of once or twice a year prior to the time there was any dredging done above Grassy Point, of going up beyond Grassy Point with a certain tug towing boom-sticks and hauling some cedar, I believe, or taking supplies, that was it?

A. Supplies, yes, sir.

Q. Now, as a matter of fact you are entirely mistaken about that aren't you?

A. How is that?

Q. You can't name a man that you ever took any supplies up there for, can you?

A. No, sir.

Q. Nor any man you towed any boom-sticks for?

A. No, sir.

Q. Don't you know you were working for the people who owned these tugs, who were in the dredging business?

A. Yes, sir.

Q. And they didn't do outside hauling at all, did they?

A. Yes.

Q. As a matter of fact you didn't tow these boom-sticks up there until after this dredging was done in the year 1893?

A. Oh, yes, in 1884.

Q. Now this dredge company you were working for weren't hauling boom-sticks for anybody, were they?

A. Yes, they were.

Q. For whom?

A. Most everybody that was at the head of the lakes at the time.

Q. Do you want to change your testimony and say that you went up more than once or twice a year?

A. No, sir.

Q. But you can't name a single person or company for whom you hauled boom-sticks or supplies?

A. No I can't.

Q. Well, this dredge company that owned all these dredges were not in the general hauling business, were they?

A. Yes, sir.

936 Q. They were?

A. Yes, sir.

Q. Well, whom did you haul stuff for?

A. I don't know. They always took the contracts themselves.

Q. Wouldn't you know whose boom sticks you hauled?
A. No, sir.
Q. Never found out?
A. No, sir.

Redirect examination.

By Mr. Gard:

Q. You went according to orders, didn't you?
A. Yes, sir.
Q. Who gave you your orders?
A. A man by the name of F. B. Daugherty.
Q. And he sent you supplies to deliver at certain places?
A. Yes, sir.
Q. And you went and did that?
A. Yes, sir.
Q. You didn't inquire?
A. No, sir.
Q. It was none of your business?
A. No, sir.

By Mr. Fryberger:

Q. Don't men on a tug usually know whom they are working for?
A. We know who we are working for, yes.
Q. You didn't know whom you were hauling boom sticks for?
A. No, sir, we don't know, only know where they are going.

937 J. H. DARLING, a witness on behalf of the State of Wisconsin, was recalled for further cross-examination, and testified as follows:

By Mr. Hanitch:

Q. When was the depth of the natural entry, of the Superior entry increased?
A. I believe that was done in the latter part of the '60's, '67 and along the following years, about that time.
Q. Do you remember what depth you gave the waters then?
A. That was before my time.
Q. Well, do you remember from your records for the records of the Engineer's office?
A. My recollection is it was something like 16 feet.
Q. Now you say that with the government boat you undertook to make the cut-off once or twice in the St. Louis River, did you?
A. Yes, we have done that.
Q. What boat was that do you recall?
A. Vidette.
Q. What depth of water would that draw?
A. That drew, I believe, six feet, six and a half.
Q. How long was she, do you remember?

A. She was about 90 feet, about 110 feet over all, I believe.

Q. Now in taking that channel you would come past Grassy Point on the west side out to a point, Clay Butte there which is known as Billings Park now and then strike straight off to the northeast end of this Armstrong Island, would you not?

A. I cannot quite describe it now. I remember though that this shallow portion of the channel was on the southerly side of
938 Armstrong Island, or southeasterly, and not very far from the main channel which was near Grassy Point.

Q. But you didn't take what you describe as the main channel when you were going to take the cut-off, did you?

A. We took the main channel up for a distance past the end of Grassy Point, just how far I don't remember, but before we got opposite Armstrong Island, considerably before that we turned off and passed south of Armstrong Island.

Q. Now taking the exhibit which you marked Wisconsin Exhibit 1, just indicate where you would go if you were going to take that cut-off, where would you leave this main channel when you passed Grassy Point?

A. About there.

Q. Is this the island here?

A. That is the island there. In a general way, as near as I can recollect, when we wanted to take that cut-off channel we would leave the main channel and proceed something like this.

Q. Now you have drawn a black line leaving the red letter H, leaving that line at the southwesterly side of Grassy Point and then passing westerly to the southerly side of Armstrong Island and continuing around the southerly side of Big Island and around the sharp turn which is known as the Devil's Elbow where you connect with the main channel which is marked with black ink, marked D?

A. Yes, sir.

Q. Where the black line leaves the red line H witness has designated that point with the letter D, is that right?

A. Yes, sir.

Q. Now as I understand your testimony you think the
939 navigators took that course because it was shorter when their boats were of light enough draught to enable them to pass through that channel?

A. That is it, yes, sir, I should say so.

Q. And as I recall your testimony the boat in which you sailed through this short-cut drew something over six feet?

A. That is my recollection now. I think it drew six and a half feet, as near as I can remember.

Q. Now as I recall your testimony up to 1891 the shallowest place or one of the shallow places in the red line channel was as low as a trifle under 8 feet?

A. Yes, at low water.

Q. Now, Mr. Darling, if the water along in the '50's and '60's if there was 6 feet of water to the northerly side of Snowshoe Island what would you say about boats using that channel and saving dis-

tance in preference to making a detour around the Minnesota shore of Grassy Point?

A. I don't quite understand.

Q. Well, would they not follow the black line which was made upon this exhibit as far as the northeasterly point of Armstrong Island and then go straight across the old channel if they had six feet of water, in preference to making the half circle which your red line indicates?

A. There might be a preference for the deeper channel on account of having more water and the saving of distance would not be very great in that case.

Q. When you say deeper channel, how much deeper is it? It wouldn't be as much as eight feet, would it?

A. On that curve it is more than eight feet.

940 Q. But if you were going up the river you ought to be able to get across there should you not?

A. The course you are speaking of now, Mr. Hanitch, I understood to be on this black line I have drawn on the map.

Q. Starting at D and going on the black line as far as the northeasterly end of Pie Island or Armstrong Island and then going directly northwest to the old channel in other words cutting right straight across this half circle which your red line H makes.

A. I suppose they might shorten it that way; I don't know why they shouldn't. To be sure there is another advantage in following a main channel. In the spring of the year—no, I should say except in the spring of the year there are weeds and rushes growing up in the shallow water and even water having quite considerable depth, except in the deeper channel and the absence of those rushes while there are rushes on each side of this main channel makes a good guide to vessels in running through the channel, an aid to navigation.

Q. If the draught was such as to enable them to go up the cut-off no one hesitated about taking that cut-off, did they?

A. I should say that the fact that the water is considerably shallower than it is around the curved channel would be an inducement, they wouldn't be running so near the line where the vessel would drag.

Q. Well, do you think the natural channel was handier?

A. It was not handier than this course you are mentioning but it was deeper and they wouldn't feel the bottom.

Q. Well, how much deeper is it in the lowest places?

941 A. It has a depth of probably near twenty feet.

Q. But you admit there was a bar in there of considerable length that had less than eight feet?

A. Yes, but that bar crosses about where these two meet, to the westward of Armstrong Island.

Q. Well, might it not run into the main channel a little above the point of the bar?

A. Possibly it might.

Q. Well, assuming that that boat drew six feet of water, six and

a half feet of water, why wouldn't a boat of six or six and a half feet use that direct course instead of taking the long course?

A. Well, because the channel is not so well defined for one thing; it is not as deep for another.

Q. Well, doesn't it run considerably farther? How much would you say?

A. I should say it looks as if it might be perhaps five hundred feet or so farther.

Q. Just measure that. I think you have made that too short.

A. If I had compasses I could do it.

Q. Well, even roughly. I think you will find it is more than five hundred feet.

A. If I had a piece of paper I could tell. You are talking about the channel running across about like that up to there.

Mr. Hanitch: The witness indicates from point D to a place northwesterly of Armstrong Island.

Q. Yes, how much distance would you save by taking that straight course as against taking the curved red course which you described as the main channel?

A. Somewhere near three hundred yards or nine hundred feet.

942 Q. Well, assuming, Mr. Darling, that the depth of water enabled you to go directly from the southeasterly point of Grassy Point straight across to the northeasterly of Armstrong Island into the old channel, what would you say about navigators using that line if the depth of water was there instead of making the detour that you spoke of?

A. I would say that if the course was sufficiently well known or marked and the boats were of very light draught persons knowing the channel well would be very likely to take it although I am not aware that they did so.

Q. Well, I am talking now about prior to the time of your coming here. You say boats of sufficiently light draught. What do you mean by that? How light draught would you speak of?

A. Boats drawing less than—oh, less than six feet or so.

Q. If you had the same depth of water running here that you have across the bar or did have across the bar in the natural channel then a boat of the same draught could use it could she not?

A. I think so.

Q. In what depth of water do you say the weeds grow or begin to show up?

A. I think they grow in water as deep as three feet and more than three feet.

Q. Well, would you say exceeding four feet?

A. I am not sure about that.

Q. Well, would you say exceeding five feet? We want your best judgment, that is all.

A. That would be mostly guesswork. I wouldn't want to say.

Q. Well, you wouldn't say they grow up in seven feet, would you?

A. I don't think they would.

943 Q. Now, Mr. Darling, I show you Wisconsin Exhibit number 46-C which is designated as the Meade map, and is a photograph or tracing of the original, isn't it, Mr. Darling?

A. This looks like the original sheet of the government survey at that time from which the sailing chart was compiled.

Q. You are familiar with this map, are you not?

A. Yes, I have seen this before.

Q. Now, Mr. Darling, placing your finger on a point in what you call the main channel which is just north, or southeasterly would you say?

A. South.

Q. —very near south of the southeasterly point of Grassy Point and following a straight line to the northwest toward Armstrong Island, what depth of water do you find in that channel to a point within say two hundred feet of Armstrong Island?

A. It starts with eleven feet and ten feet is about the ruling depth through that.

Q. Never less than ten feet?

A. Nothing less is shown on this map.

Q. Now when you get beyond that and following in a straight line past Armstrong Island towards the northwest to meet the old channel below the bar, what depth of water do you find through there?

A. A depth of something like eight feet to ten feet, well, eight feet.

Q. Substantially eight feet?

A. Yes, as shown on this map.

Q. And you find that this channel or this depth of eight feet of water or ten feet of water was as handy if not handier than what you designated the main channel, isn't it?

944 A. That is as handy, as it is shown on this map.

Q. I show you Minnesota Exhibit 1 and ask you whether the red line passing from A-G-B-C is not substantially the line which you have testified would give you eight feet of water as shown by Wisconsin Exhibit 46-C?

A. It is substantially the same.

Q. And it would save more than a thousand feet, wouldn't it as against the detour line which is described as the main channel?

A. I should think it would save about a thousand feet.

Q. Now assuming that you are correct in your testimony that the navigators took the short cut to save distance, why isn't it logical to say that the navigators would take this one to save distance, in view of the fact that it is just as deep water as the main channel?

A. I want to say here that my recollection is that at the time, in the time I was acquainted with the river and was working there, along in the '90's, I found what was shallower water than that exhibit shows.

Q. Than the Meade map shows?

A. Yes, the map we were looking at. I don't think there was eight feet running then.

Q. In the '90's?

A. Yes, but I remember in the vicinity of that bar near the red line, that first line to the westward of Armstrong Island, along in the

vicinity of that there was a shallow bank on each side of the channel which was hard to get across with a moderate size launch, shallower than what is indicated there. That shows deep water, there is eight feet or so.

945 Q. The Meade map shows that?

A. Yes, that shows that.

Q. Having in mind that the state was admitted in 1848 and navigation began shortly thereafter have you any reason to believe that the Meade map was not correct in the '50's and '60's?

A. I think it was correct at the time it was made.

Q. In the '50's and '60's?

A. At the time it was made I think it correct.

Q. If that was so, in your judgment, would you say that it was probable or improbable that when navigators wanted more than eight feet of water they used this channel which has been designated on Minnesota Exhibit 1 as A-G-B-C?

A. If I understand your question correctly you mean to ask why they didn't use it?

Q. I mean to ask this, in the early days when the boats that were used did not exceed eight feet in depth is it not probable that they took this cut instead of using the detour that was made by the old main channel?

A. I should think it was probable.

Q. If the Meade map was correct, and you say it was correct, isn't it probable that they took that short-cut?

A. I should think it was. I should think those who knew of it would use it, I would do it myself.

Q. Now as a further reason for taking that channel could they not use the same channel up to Armstrong Island whether they were going to take the short cut or take the channel north of Big Island?

A. I don't understand.

946 Q. As a further reason for taking that channel when they were going to the north of Big Island would it not be an advantage, that is the fact that they could use the very same channel up to Armstrong Island whether they were going to take the short-cut or take the other channel, would that not be an advantage, taking that channel?

A. It would apparently be an advantage to take this channel with eight feet of water providing they had no trouble in following it for want of marks.

Q. Well, it is conceded that anybody who is going to take the short-cut would run straight up to the northeast point of Armstrong Island, isn't it?

A. Oh, yes.

Q. Well, now with eight feet of water would it not be natural that a man would follow that same channel up to Armstrong Island, if he had eight feet of water on the northwesterly side of Armstrong Island and he wanted to go to the north side of Big Island he would take that channel, the main channel, he might do so?

A. If he was perfectly familiar with it.

Q. Well, he had a very short distance to be familiar with.

A. The main channel might be a little easier to follow when there is no weeds.

Q. Well, there is enough depth here to follow when there is no weeds and a matter of only a thousand or fifteen hundred feet to go?

A. It would seem as though there might be, it would seem as if he would.

Q. Well, isn't there every reason in favor of his doing it logically?

A. Well, sometimes there are other conditions. For instance, a boat drawing eight feet would be pretty close to the bottom
947 and would drag considerably.

Q. You wouldn't ask more of one eight-foot channel than you would of another?

A. You mean following that same channel to take the cut-off?

Q. They would follow the same channel as far as Armstrong Island and then if they wanted to go to the cut-off they would turn to the southerly side of Armstrong Island, if they wanted to go to the north of Big Island they would turn to the right of Armstrong Island and they would have eight feet of water right through, wouldn't they, according to the Meade map?

A. The map says eight feet of water all right. Of course vessels taking the cut-off effect a large saving in distance, I think as much as a mile, from my recollection, and that is quite an object, and so they might venture on this comparatively shallow tract or area even though it was not well marked, whereas if they wanted to take the main channel or go to the north of Big Island the saving in distance would be much less, a thousand feet as against a mile, and they wouldn't take the chances or they wouldn't care to go into shallower water for instance for the sake of a thousand feet only.

Q. Well, now in the first place they would have a better point to steer to by using Armstrong Island, wouldn't they?

A. The main channel is as well defined when there are rushes growing on it.

Q. Yes, but in the spring time there are no rushes and the island was there in the spring time as well as in the time of rushes?

A. Oh, yes.

948 Q. So that sailors would have a better point to steer to with the island, would they not?

A. I think they would. As far as I know the island was always there until it was dredged away by the government.

Q. And with eight feet of water there wouldn't be any rushes in that channel?

A. I don't think there would be in that depth of water. The main channel runs not very far from Grassy Point, and Grassy Point itself forms kind of a landmark by keeping about so far away from it.

Q. Well, that is a curving channel and this other is a straight channel, isn't it?

A. Yes, sir.

Examination by Mr. Fryberger:

Q. Now, Mr. Darling, counsel for the state of Wisconsin askel you to mark with a red line the channel of the St. Louis River.

A. Yes, sir.

Q. And you did.

A. Yes, sir.

Q. According to your opinion?

A. Yes, sir.

Q. Where do you place the mouth of the St. Louis River in your opinion?

A. My opinion has been and is now that the mouth of the St. Louis River is at Grassy Point.

Q. Well, now that is a matter over which you engineers seem to differ widely, don't you?

A. The engineers——

Q. Well, just answer the question. I say you do differ widely on that point, don't you?

A. No, I don't know that we do, the engineers——

Q. Do you know anything about Major Huston being in charge of this division here at the head of the Lakes?

949 A. I believe he was in charge a long time ago.

Q. From 1870 to '73?

A. Yes, about that time.

Q. And you know it is in evidence here that he testified that in his opinion the mouth of the St. Louis River was at least sixteen miles above Rice's Point. Now do you agree with that?

A. Sixteen miles above Rice's Point?

Q. Yes.

A. No, I wouldn't agree with that.

Q. I think it is in evidence here that his testimony was in substance, I can get the exact language if necessary, that he did not consider that the water above Grassy Point up as far as where he located the mouth of the river, had the characteristics of a river. Now what do you think about that?

A. Well, I would differ from him in regard to that decidedly.

Q. Now you didn't take any of these soundings personally, did you? You didn't get out in a boat and take the measurements?

A. Not usually, not to make these maps. I did sound in the channel myself at the time of removing these bars that I have described.

Q. You did sound in the channel?

A. I did myself, yes. I was in the boat and recorded the soundings, I had a man do it.

Q. Did you ever take any soundings for the map?

A. No, sir.

Q. You are an office man?

A. Yes, sir.

Q. You are not a navigator?

A. No, sir.

Q. Never navigated a boat in your life, did you?

A. Not to speak of.

Q. Did you ever run the Vidette?
A. No, not as a rule.
Q. Did you ever run it?
A. I presume I ran it short distances.
950 Q. With the master at your side telling you what to do?
A. Yes, with the master.
Q. You would stand and hold the wheel as he told you?
A. I know how to figure courses.
Q. Now you never navigated these waters above Grassy Point yourself, did you?
A. No, I have not.
Q. Referring to this Meade map Minnesota Exhibit 1 I want to call your attention to this red line marked on this map from A to G, G to B and B to C, which has deep water, not less than eight feet at any point, which you tell us was so in testifying about the Meade map Wisconsin Exhibit 46-C, now I want to state to you in the way of testing your confidence in your opinion, that I think about twelve different navigators such as Mr. Merritt, the two Merritts, Leonidas and Alfred, Mr. John Howard, Ben Howard, Mr. Norton, Mr. Brewer, Captain McDougall and Captain Stevens testified that from the time they started to navigate up until the dredging was done of this bar to the north of the point marked C on this map, they invariably when they wanted to go up the river took the channel running from A to G, B to C, whether they went by the channel to the north of Big Island or whether they went by the channel to the south of Big Island, now do you know whether or not when those gentlemen testified that that is the way they invariably navigated those waters above Grassy Point, whether that is true or not?
A. I wouldn't doubt their testimony at all.
Q. You would think these men would know more about
951 the way they went than you would?
A. Oh, yes, sir.
Q. You would agree with their testimony?
A. Yes, sir.
Q. Yes. You are an office man and have been for years?
A. Have been, yes, sir.
Q. And you wouldn't want to say from what little observation you had from any navigation that those men were not telling the facts?
A. Oh, no. My own experiences in the government boats have been around the main channel except when we occasionally went across to the shallow channel of the cut-off over here. That is where I was accustomed to go when we went up the river and I wasn't aware of the use of this other channel that you have been speaking of.
Q. Well, if those men testified that they used it you wouldn't doubt it would you?
A. Oh, no, not at all.
Q. And if this channel shown on the Meade map as testified to had not less than eight feet of water at any point there would be no rushes or reeds there, would there?
A. I don't think there would.
Q. Now do you know as a matter of fact that the only purpose in

the early days, that is, prior to 1885, say, that the only purpose of using this channel running from G to H on Minnesota Exhibit 1 was to go up to a litle point called Millford, do you know anything about that?

A. I am not familiar with Millford by name.

Q. Never heard of it even.

A. No.

Q. Now this bar that you spoke of, to the northerly of C, which was dredged out by the government in 1893 was composed of very hard sand, wasn't it, very hard material?

A. It was sand, and I can't remember how hard it was.

952 Q. And *you* told you you got stuck on that bar in the government boat the Vidette or the Nautilus, right on that point?

A. I don't think we got stuck on there.

Q. You don't remember that?

A. No. The Vidette drew six to six and a half feet of water if I recollect.

Q. Now what do you know about this channel running around from E, this red line around to F, as shown on Minnesota Exhibit 1, do you know anything about that channel?

A. I knew there was a channel of deeper water running off in this direction, the direction of that red line from A, from having seen it on our survey; we never used it much and I don't know when the measurements were taken for this particular line, this course marked on this Exhibit 1 to the point F.

Q. Your boat didn't go that way?

A. No, sir.

Q. When you were on it?

A. No, sir.

Q. As a matter of fact you were not personally up on those waters once a week, were you?

A. I don't think it would average that.

Q. You wouldn't average once a month during the summer?

A. No.

Q. Well, you didn't personally know a great deal of what was going on outside of your reports and your maps?

A. Oh, I wouldn't know all about it, I would know some of it from what I saw and heard. I was working more or less around there but I wouldn't be as familiar with those channels as these navigators who were actually running boats up and down.

953 Q. Then if they testified to that fact you would think, would you not, that you might be mistaken?

A. Yes, that is true.

Q. Of course since this trial has been going on you have been asked to refresh your memory as much as you could from your maps?

A. I don't think anybody asked me to do that.

Q. But you tried to do that?

A. Yes, I tried to a little since this has come up, I have been studying the maps lately, but of course I have a general recollection of them, and generally speaking I am familiar with the maps.

Q. And since 1892 you have had more to do with those waters in question with this bay than you did before?

A. Yes, sir.

Q. In 1892 there came a demand from New Duluth on account of some sawmills being located there, '91 and '92, to make a channel that would allow them to bring down their barges drawing about twelve feet of water, you remember that, don't you?

A. I don't remember just the depth.

Q. Well, bring down those barges of lumber?

A. They wanted greater depth of water.

Q. That was the first demand for deeper water?

A. That was the first.

Q. You went to work, the government did and improved the river or bay by digging out, dredging out this shoal to the north of C marked on Exhibit 1, that was in '93, was it?

A. That, I believe, was in '93.

Q. Well, that is the beginning of the navigation of this channel. Now, isn't it a fact, this channel which is marked H or don't you know what the fact is in regard to that?

954 A. Do. you mean that was the beginning of navigation?

Q. Of the real actual navigation by boats of that channel, after you dredged out a channel so it could be used, and prior to that time, as testified by all these navigators, they went along the channel marked A-G-B-C or are you prepared to say which way?

A. I am not prepared to say either way.

Q. Well, you can't see any reason after hearing all this evidence and hearing the questions put to you, you can't see any reason why these navigators with six or seven foot boats shouldn't travel this channel marked A-G-B-C, you don't see the slightest reason, prior to the time you dredged out the bars?

A. I have given the reason as well as I could why I thought the vessels would take the other course around and my recollection is that there was shoal water on the sides of the bar which it seems to me would prevent getting the main channel at that point marked C, but maybe I am distaken in that.

Q. What have you to found such a conclusion on, if that is what you call it, when the Meade map shows differently, and the testimony of these men, which you say you do not doubt?

A. I do not dispute the testimony of these men, that they had deeper water in that channel or that the Meade map shows it; at the same time when I was making soundings over that bar for the purpose of improving it I remember running onto a shallow margin of the channel in that locality which would prevent a vessel crossing it of any depth, I should think it would be not more than three feet of water in that time I mention on that bar.

955 Q. Well, you don't mean there is only three feet of water from the point B to C as shown on Exhibit 1, do you. If you do we will get the original Meade map here.

A. There might be a change since that Meade map.

Q. Well, we are not talking about possibilities.

A. At least I found from my own observation on that bar near

C I remember distinctly finding a shallow margin to the channel which I cannot exactly locate the extent of now but I remember that shallow water very clearly. I know that a vessel drawing six feet couldn't cross. I don't mean to say that there might not be deeper water in this vicinity which they could cross.

Q. Now let me call your attention to this, that bar you speak of as being near point C, that was several hundred feet distant from point C, isn't that true, Mr. Darling? Now look at this map, Wisconsin Exhibit 46-C which shows this bar several hundred feet distant from the juncture of this channel running from B to C. Here is C on that map. You see there is deep water running up here all the way?

A. Yes, sir.

Q. You certainly didn't strike any bar in nine or ten feet?

A. Your C is quite a distance over but that bar is——

Q. Several hundred feet from C, isn't it? Wouldn't you say several hundred feet?

A. That is several hundred feet further down. I must say that my shoal water I discovered is evidently not on the line of this red channel on Exhibit 1.

By Mr. Bailey:

Q. The dock line was moved out by the government in '94, wasn't it?

956 A. In '99.

Q. Well, in '94 it was moved out?

A. Possibly in '94 also.

Q. Now referring to Wisconsin Exhibit 31-I this heavy white line that you see which is northwesterly of Pan-Cake Island passing through the corner, that is the dock line established in '99, is it?

A. Yes, sir.

Q. And this lighter shaded line I am pointing to now, that makes an angle just northeasterly of Pan-Cake Island was the dock line established in '94, wasn't it?

A. I think so. I don't remember distinctly just when that was established.

Q. And when the government establishes a dock line that indicates that there is no objection to the shore owners filling in or using the property out to where the dock line is, as a general rule?

A. As a general rule.

Q. And at the time this Exhibit 31-I was made there had been a dock line established beyond what you have described as the main channel for five years, hadn't there, at least five years?

A. I believe that is true.

Q. Well, then when this stipulation, so-called, was put on here that they should not fill up the old channel, that has no reference to what you have described as the main channel out there because that had been out of existence for five years at least, is that true? It must be true, isn't it?

A. The channel was used.

Q. That stipulation on this map did not refer to what you have described as the old main channel when the harbor line had been away outside of it towards the Wisconsin shore for five years, did it?

957 A. It refers to the old channel.

Q. How could it when the harbor lines had been drawn outside of what you have described as the main channel for at least five years at that time, and so this stipulation could not have referred to what you have described as the old main channel. It must have referred to other channels?

A. Oh, I think it referred to that main channel. The main channel had not been obstructed up to the time of the establishment of the new harbor line in 1899 although there had been this previous harbor line established which was just pointed out, and that harbor line crossed the main channel.

Q. There were several channels, were there not, all through these waters above Grassy Point?

A. Yes, there was more than one.

Q. A large number of them?

A. More than one. I don't remember that this previous harbor line carried that stipulation as to keeping the original channel open.

Q. You mean the harbor line of 1884?

A. Yes, sir.

Q. Well, the reason was the channels were outside of that harbor line, wasn't it?

A. No, I don't think so. Although it didn't, as far as I remember, carry such a stipulation, yet our office wouldn't allow that channel to be obstructed if there was a channel outside they would have thought about it, that it was simply an omission, of the description not being as complete as this.

Q. As a matter of fact, Mr. Darling, practically about even with Pancake or Armstrong Island, as you call it, there is clear from the Minnesota to the Wisconsin shore, except Pancake Island itself, of course, about the same depth of water clear across, isn't there, not very much difference?

A. Not the particular line you mention.

Q. Well, passing right through from north to south,

958 from Minnesota to Wisconsin, and passing right over Pancake Island, there is about the same depth of water and shoals, according to government soundings?

A. A uniform depth?

Q. Yes, substantially so.

A. Clear across including the channels?

Q. Yes, all the way across except right close to the shore, that is true, isn't it?

A. I cannot see much variation just there.

Q. Well, there are indications across there that there might have been a bar some time clear across, are there not?

A. The old original channel is a direct channel——

Q. Well, confine yourself to the question. Isn't it true that practically clear across from Minnesota to the Wisconsin shore there is

approximately the same depth of water except when you are right close to the shore and there are indications of a bar or a point commencing to form clear across there?

A. I don't believe I can answer that question.

Q. Well, I have no objection to your looking at the maps.

A. Well, if I knew just what you meant—take some particular line.

Q. Take this old Meade map Wisconsin Exhibit 46-C from the Minnesota shore right across clear over to the Wisconsin shore you find a sort of a line of more or less shallow water clear across, don't you, indicating that there was a formation or point started, is that true?

A. I have never noticed that.

Q. Well, if you had not that is true, isn't it?

A. I can't say.

959 Q. In other words in approximately the center of what we term here upper St. Louis Bay there is a line of shallow water clear across which is just as it is in lower St. Louis Bay where the depth is substantially the same, is that true?

A. There is no very great variation in depth.

Q. Well, you find eight feet?

A. Well——

Q. Are there any soundings show less than eight feet, 7.9?

A. The line crosses the main channel in the deeper portions of it.

Q. Now taking a line across where you say you found your 7.9 feet. You find approximately the same depth clear across, don't you, except right here?

A. That varies I think from eight feet or so.

Q. Well, you don't find any greater variation than you would by taking the same line across what we know as lower St. Louis Bay?

A. More irregularity.

Q. Than there is in lower St. Louis Bay?

A. St. Louis Bay has a line showing variations from a depth of about eight feet or so.

Q. Well, not substantially more than shown in upper St. Louis Bay?

A. This is much more uniform; this varies quite a good deal in uniformity where it crosses that Armstrong Island.

Q. Well, I expected that.

A. And in ordinary channels I have never noticed this tendency that you speak of from my own observation.

Q. Well, you do now that I call attention to it that there is a line clear across of quite shallow water?

960 A. I don't know that that is so different from what it is farther up.

Q. You sort of shift the question, isn't that true, as you look at it?

A. That exhibit there starts just about that point and to state that question you mentioned whether there was an indication of a new point being formed, we would have to look at the territory up above there, which is not shown on that exhibit, and that is a pretty hard question to answer whether there is a beginning of a new point.

Q. I didn't put it as the beginning of the new point. Isn't it quite possible that in the early days the point started to form there and then later formed down below?

A. I wouldn't want to say that and I don't know that there is really any indication of that.

Redirect examination.

By Mr. Gard:

Q. I will ask you to look at Wisconsin Exhibit 46-C which is the original Meade map and examine the contour lines and the sounding at the bar in the vicinity of Armstrong Island and see if it does not show at least 10 or 12 feet of water across the bar.

A. A depth of 10 feet is marked.

Q. And doesn't the contour line show a depth of 11 feet right through the bar?

A. I don't think so. I think the bar shows less depth than 9 feet.

Q. Well, then there is 9 feet of water shown over the bar, isn't there?

A. 9 feet. That must be the 9 foot contour there, the 9 and 12 foot depths are marked by a contour.

Q. Well, here is Exhibit 46-C which shows at least 9 feet
961 of water over that bar, doesn't it?

A. That indicates it at the bar.

Q. And it may be more than 9 feet in places?

A. Yes, and it might be less because sometimes they do not catch the shallowest point with their contour.

Q. There is 8 feet outside of those contour lines that are close together at the bar, isn't there?

A. Well, I see 7 feet, 9 feet, 8 feet on the easterly side of the channel above the bar, 8 feet going up; that may be 9 feet I can't tell, that looks like 9 feet over close to the bar.

Q. Well, then that map indicates to you, doesn't it, that there was 9 feet over that bar at the time the Meade map was made?

Mr. Fryberger: Objected to as leading and suggestive.

A. It would seem to indicate that, yes, sir.

By the Commissioner:

Q. There is an exhibit here called the Bayfield chart. Are you familiar with that?

A. Yes, I am to some extent.

Q. It is marked on the face a track survey. What does a track survey mean?

A. I have not seen that term used, Judge, except on that map but I know it is there and I take it to mean a survey of the course followed by pilots in navigating the water, bay.

Q. Well, do you know anything about that chart, how it was made?

A. I don't know positively any more than I can gather from the chart itself. They didn't make their maps at that time with the refinements that are used since then, at least in this particular case.

962 It was a comparatively rough survey made in accordance with the necessities, of course, and they didn't cover the entire bodies that were included in the map. I think they must have been limited in their time and means and tried to give soundings which would be of most direct benefit to the navigators and with the least expenditure, and I presume in making that track survey up the St. Louis River they secured the services of some persons familiar with the water who had been running courses up and down the river, perhaps some Indian guide or some early settler who knew from his own navigating where the best water was or where he supposed it to be, and he took his party surveyors up along that course and they surveyed that course without going outside of it to find whether there was anything better or not. That is apparently the character of that survey.

By Mr. Fryberger:

Q. Well, that was considered a very excellent piece of engineering and surveying at the time and for years after, wasn't it?

A. Yes, it was a good survey for that time.

Q. Very accurate, wasn't it?

A. Well, it wouldn't be very accurate with the present standards.

Q. Well, that was a chart that was used by navigators until they got the Meade map, wasn't it?

A. Oh, yes, it was accurate enough for the purpose in those days.

Q. I say it was used by navigators until they got the Meade map, wasn't it?

A. Oh, yes, that is true.

Q. The only one they had?

A. Yes, sir.

963 Q. And when you say they didn't go outside of the track used by these navigators all you know about it, as I understand, is that they do not show soundings outside of this track. You don't know where they went on the bay? All you know is what the chart shows?

A. All I know is what the chart shows. The rest is presumption.

Q. Well, it is the common understanding, isn't it, that the Bayfield survey was made from information furnished by the Indians and early explorers here?

A. Oh, it was an actual survey by the officers whose names are given on the chart.

Q. But they got the information from the Indians living here, isn't that the common understanding now?

A. I don't know that. I presume they employed Indians who were familiar with the waters to pilot them along the usual course of travel and that the surveyors only made soundings along that course for want of time to make more extended surveys.

By Mr. Bailey:

Q. As far as you know, that course was used right down to the time of the Meade map?
A. I don't know whether it was or not. I have no personal knowledge of that.
Q. Well, of course you weren't there, but that is the general understanding?
A. I presume it was.

(Court here adjourned until 3 o'clock P. M.)

964 TUESDAY, August 14, 1917—3:00 P. M.

J. W. NELSON was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

Q. Where do you live, Mr. Nelson?
A. In Duluth.
Q. How long have you resided there?
A. Forty-seven years.
Q. What is your business?
A. I am a merchant over there, books and stationery.
Q. How long have you been in that business?
A. About twenty-five years.
Q. You were at one time alderman of the City of Duluth?
A. Yes, sir.
Q. For how long a time?
A. Seven years.
Q. That was about in what year when you were first elected?
A. About twenty years ago.
Q. And you continued in the council for seven years?
A. I did.
Q. Are you familiar with the Duluth harbor and St. Louis Bay and St. Louis River waters?
A. I am.
Q. How long have you been familiar with them?
A. Well, since the '70's.
Q. You may go on and state how familiar you are and how you became acquainted with the waters and what you did to become acquainted with the waters at the head of the lakes here?
965 A. In the early days of Duluth I was, as I am now, always interested in outdoor sports and our main sports were up the St. Louis River for hunting and fishing and so forth.
Q. And how frequently would you go up?
A. In those days probably twice a month.
Q. Someone go with you?
A. Yes, sir; wouldn't go alone.
Q. How would you go up?

A. Most of the time in the beginning went with sailboats from Duluth.

Q. Your sailboat?

A. Yes, sir.

Q. How much water would these sailboats draw?

A. Well, I had two sail-boats; one would draw about three feet and another one would draw about six feet with the centerboard down; two feet without the centerboard.

Q. And you used those sailboats till about what time, what year?

A. I had the one boat there, the big one, for about fifteen years.

Q. The one that drew six feet of water?

A. With the centerboard down.

Q. Did you go up the river on other boats?

A. Yes, sir.

Q. What boats?

A. I used to sail up the river with Captain Hibbard on the Stillman Witt and Free Trade. That was his last boat; and went up the river in good-sized Government boats.

Q. How large?

A. Considered good size in those days, a side wheeler.

Q. Revenue cutter?

A. It was a revenue cutter, yes.

Q. Do you know whether it was the Cumberland or not?

966 A. I remember the name of a boat by the name of Cumberland, but I couldn't say whether that was the name of that boat or not.

Q. Now, how often did you go up the river with Hibbard on the Stillman Witt and the Free Trade?

A. That was during the summer months; probably two or three times during the season. He ran a sort of an excursion steamer up there.

Q. Were the boats that Captain Hibbard ran excursion boats?

A. Yes. They were excursion boats.

Q. Do you remember about what years that was that you went up with him on the Stillman Witt and the Free Trade?

A. That was in the latter part of the '70's, I think; latter part of the '70's.

Q. Well, after that time did you go up the river on any boats?

A. In the fall of the year we used to go hunting, and I have gone up several times with old Captain Clow, the father of the Clow boys now.

Q. Where would you hunt?

A. Up opposite where the Steel Plant is, and further up, near Chambers', that is, the old Fond du Lac depot is where we usually started in.

Q. Well, after that did you go up the river on any boats?

A. Oh, yes; I have been up the river every year.

Q. Every year?

A. Yes, sir.

Q. That is, on excursion boats?

A. Well, not of late years.

Q. What boats would you go up with?
A. Not of late years I have not.
Q. But in the '90's, what boat did you go up on, or boats?
A. Oh, I have gone up on the Barker.
Q. How many times?
967 A. Oh, I couldn't say. I should say half a dozen times.
Q. Are there any other excursion boats that you went up on?
A. There was one by the name of Kesota, a side wheeler.
Q. Was that before the channel was dredged out which is now the main channel up the river?
A. Why, I should say about ten or fifteen years before the channel was changed.
Q. Did you ever go up the river on tug boats?
A. Yes, sir.
Q. What tug boats?
A. Well, if you call that Clow's boat, that was a small tug or fish tug.
Q. About how much water would it draw?
A. About five or six feet.
Q. What was the name of that?
A. The John Pridgeon.
Q. In the trips that you have made up the river have you observed what course the navigators generally took in going up the river?
A. Yes, sir.
Q. Will you state what course they took in going up the river generally?
A. In the early days?
Q. Yes, in the early days before '93.
A. Well, the larger boats would invariably go up what we called the main channel.
Q. And the smaller boats?
A. Would sometimes go up the main channel and come back the cut-off.
Q. Now, what you have stated was the main channel, will you give us a general description where that is. Commence at either end of it, either at Big Island or down at Grassy Point?
A. You mean going up the river from Grassy Point?
Q. Yes. Take that. That will be all right.
968 A. Well, the main channel after you leave the St. Louis Bay you got up kind of south, practically south a little bit, quite close to the Wisconsin shore, and then she would make quite a turn to the west or might say northwest, and there was you might say the dividing of the two channels; boats going down the cut-off would strike the channel at that point.
Q. And then what course would they take?
A. Take what we call the main channel?
Q. Yes.
A. Follow the channel right up the Minnesota side at a point

of land there where there would be no grass or anything between the shore and the channel, be quite close.

Q. Quite close to what shore do you mean?

A. Minnesota shore.

Q. Then what direction would you take?

A. Then we would turn and go out pretty well.

Q. Toward the island?

A. Towards Big Island, pretty well out, and then would turn and go right west up again pretty close to the shore of the Minnesota side, right up very close that would bring it——

Q. Do you know where Tollis Island is?

A. That would be inside of Tollis Island. We would go close to the Minnesota side.

Q. That is, between the island and the Minnesota shore?

A. Yes, sir.

Q. Then what direction from there would you take?

A. Then you head towards the north side of Big Island. Then you go west again right into Spirit Lake station.

969 Q. Is there a dock there?

A. There is now, yes, sir; but that's not the dock that was there then.

Q. When was there a dock there before; when was the first dock built?

A. There was an old dock there that was put in many years before.

Q. Will you state about how long ago?

A. That was in the '70's.

Q. Has there been some kind of a dock maintained there from that time to this?

A. When I was in the council we had a new dock built in there. This old dock wasn't safe. The Barker used to stop there but it wasn't deemed safe to let passengers off and on there so we thought it advisable to put in a safe dock, which was done, at the foot of Clyde Island.

Q. What direction after leaving Spirit Lake dock would you take in going up the river?

A. You would turn south and then turn more southeast towards the—follow Big Island.

Q. Until you got to the south end of Big Island?

A. South end, then you turned to the west again and followed the Wisconsin shore up until you got where there is low land again. You would go more toward the Minnesota side.

Q. Now, in these boats that you have described; take the Barker. Which course did you take in going up?

A. It would usually take the main channel but I have——

Q. Then the smaller boats, what course would they take?

A. Both.

Q. They would take both?

A. Yes, sir.

Q. That is, you say that they would go up on the south
970 side and come down the main channel?

A. No. They might go up the south channel and come back the south channel, and sometimes go up one way and come back the other; if they had excursions they would usually do that.

Q. What would you say about boats drawing ten feet of water, nine or ten feet of water, would they go up the short-cut?

A. Not unless it was a very heavy northeast wind. The water would vary up there. They could in high water go up the short-cut.

Q. But those boats took the other channel, did they, always in going up, unless it was a high northeaster?

A. Unless the water was favorable they would go the main channel.

Q. I show you Wisconsin's Exhibit 1 and ask you to describe the main channel that you found—or to follow the main channel with your finger or pointer, which you have been testifying to?

A. If that hadn't been marked in red I should have marked as near as could be possibly done on the same line.

Q. That is, that red line——

A. That's what we understood to be the main channel.

Q. ——that Mr. Darling has marked, is what you have been describing?

A. Yes, sir. And this is the cut-off or the small channel through here.

Q. Describing the line marked with black ink?

A. D.

Q. Starting at D?

A. That is the cut-off.

Q. Commencing at D it is the black ink line that is run in a southerly direction east and south of Big Island?

A. The boats, the smaller boats taking the cut-off wouldn't
971 as a rule go up that far to go into the cut-off, going up the river.

Q. As far as D?

A. As far as D.

Q. Where would they usually go?

A. They would strike it in here. (Indicating.)

Q. A little southeast——

A. A little south of D, yes, sir.

Q. About how much south?

A. We would say here (indicating).

Q. Can't you tell about how far that is? Here is a scale here.

Mr. Hanitch: 1500 feet.

Mr. Hudson: It isn't that far, is it?

A. I think that would be a third of a mile out of the way, that line where they would turn.

Q. Mr. Nelson, you say that when you were alderman the city built a dock at that point. Was that in the city limits at that time?

A. That was shortly after we had taken in West Duluth, yes, sir.

Q. This was in Spirit Lake. Did the city limits of West Duluth include Spirit Lake at that time?

A. This was the first of my term and we put that dock in at Spirit

Lake. That is the new dock. The old dock I don't know when that was put in there except it was some time in the '70's.

Q. You don't remember distinctly the year?

A. No, I do not, but I know it was in the City of Duluth or we wouldn't have no jurisdiction over there.

Q. You had no interest in the property up there at that time, in any of the property of Spirit Lake?

972 A. Yes, sir. I had some lots up there.

Cross-examination.

By Mr. Fryberger:

Q. Mr. Nelson, you have lived in Duluth for 47 years?

A. Yes, sir.

Q. What part of Duluth?

A. Why, in the City of Duluth itself.

Q. You never lived up on Spirit Lake?

A. Well, I have summered there.

Q. Recent years?

A. Recent years, no; some years ago.

Q. How long ago?

A. When I had my family up there?

Q. Yes.

A. Oh, 26 years ago.

Q. Now, you didn't pretend to be a navigator up those waters, did you?

A. Some, yes.

Q. Well, ran a sail vessel?

A. Well, sometimes I think I am just as good a navigator as people that have papers.

Q. You think you are?

A. Yes, sir.

Q. Have you ever had papers?

A. I never applied for them.

Q. You never ran a steam tug, did you?

A. No, sir.

Q. Did you run a gasoline launch?

A. Yes; I can run a gasoline launch.

Q. You have run a gasoline launch?

A. I have one.

Q. And you are a hunter and a fisherman?

A. Yes, sir.

Q. That is your hobby, is it not?

A. Yes, sir.

Q. And you sell sporting goods?

A. I do.

Q. You never navigated any of these boats that you have spoken about, the Free Trade or Stillman Witt?

A. Not as an officer.

973 Q. The Free Trade never drew over three feet of water?

A. Both the Stillman Witt and the Free Trade was shallow draft boats.

Q. The Free Trade never drew over three feet of water?
A. I don't know as to that.
Q. And the Stillman Witt never drew over four feet; isn't that true?
A. She's a very shallow boat, yes, sir.
Q. I want to call your attention to Mr. Darling's lines, the black line and red line as shown on Wisconsin's Exhibit 1, and where he started off from his black line marked D, from his red line marked H. Now Mr. Nelson, you never saw any boats take that line, that wanted to take the cut-off, go up that far before striking off on the cut-off, did you?
A. No, because there was bull rushes there.
Q. I didn't ask you because; but you never did, did you?
A. I don't think I ever did.
Q. In order to do that in the summer months, to go up to the point D and then strike off across that water they would run right into shoal water and bull rushes, wouldn't they?
A. Right there (indicating).
Q. I say, they would run right into bull rushes?
A. I think they would.
Q. And you think Mr. Darling was mistaken when he drew that as the channel, when they wanted to take the cut-off, don't you?
A. I think so.
Q. Now, I want you to step down here and look at Minnesota's Exhibit 1 with me for a few minutes and tell us what you know about this. Now I want to know, in any of these fishing or
974 hunting excursions of yours or these excursion trips that you took on boats, picnic parties, whether you ever took the channel marked, the red line from A to G and from G to B and from B to C. Did you ever take that channel?
A. On small boats I have.
Q. On small boats you have?
A. Yes, sir.
Q. Now there was no place along that line that was shallower than from seven to eight feet, was there?
A. I think there was.
Q. There was, eh? Well, where was it?
A. I think it was right up in here (indicating).
Q. You say "here." Where was that?
A. That would be inside of an island that laid here (indicating).
Q. That would be to the westerly of the point G?
A. It would be between. The island was here, and Big Island——
Q. Big Island is up the bay several miles above where you are pointing at?
A. Oh, yes. Pardon me. Down here, yes, sir. Go ahead.
Q. I ask you if there was any point in that channel running from A to G, G to B, and from B to C, where there was less than from seven to eight feet of water?
A. This is Grassy Point?
Q. Yes, sir. You can look at the soundings right on that map if you want to.

A. I can't see the soundings.

Q. Point out to us, then, where there is less than seven or eight feet of water in that channel?

A. You strike it up here.

Q. Did you ever strike it?

A. No; for the reason that——

Q. I didn't ask you about any reason?

A. No.

975 Q. You never made any soundings there, did you, yourself?

A. There (indicating)?

Q. Yes.

A. With the boat I have.

Q. With the boat?

A. Yes, sir.

Q. Well now, Mr. Nelson, I want to ask you if you were running along this channel from A to G, G to B, and B to C, that that wasn't just as clear of rushes as it was possible for water to be at all times of the year and every year that you went up there?

A. You could pick out an open channel and not cross the rushes.

Q. Now then, I want to call your attention to this, from point G running up to point H. Do you see that point H marked in red?

A. Yes.

Q. Leading up to Millford. That hole was free from rushes, wasn't it?

A. Yes, sir.

Q. Now then, from the edge of this hole marked H, over to this channel marked in red, from B to C, that was filled entirely with rushes from the first of July, wasn't it?

A. Not entirely. There was a bank of them.

Q. There was a bank of them running from the point G clear around in a sort of a half moon clear up to the point C?

A. There was.

Q. And there was perfectly clear water running from G to around H to the point C; and there was perfectly clear water from A to G, and G to B, and B to C, wasn't there?

A. Yes, sir, there was, inside a small channel.

976 Q. Now, it appears here, Mr. Nelson, from the testimony of, I think, about twelve witnesses who testified for the State of Minnesota, who ran boats here in the early day that unless they were going to go to Millford— You recollect where Millford was?

A. Yes, sir.

Q. Unless they wanted to go to Millford up until this channel, this bar was dredged out to the northerly of C in 1893, I think, that the boats almost uniformly took the channel marked in red on Exhibit 1, which ran from A to G, from G to B, and B to C. Now if that is so, don't you think that you might possibly be mistaken about the boats always taking the channel running from G to H, when they wanted to go up the river?

A. Any boat of any size that went on up the river, never stopped to Millford, went right on up and took this channel.

Q. You don't answer my question. You think these men are all mistaken if they so testified?

A. No boats could go through there.

Q. Do you know anything about the soundings in this channel marked H?

A. This here?

Q. There was no place in that channel, was there, that was under twelve or fifteen feet?

A. In the main channel there was very few spots that was under twelve feet.

Q. Well, was there any that was under twelve feet?

A. That is the main channel?

Q. Yes, prior to 1893.

A. I don't know that there was.

Q. You don't think there was?

A. No, sir.

A. Now, let's go up and get another map; then we'll come
977 back to this one. Step right up here, Mr. Nelson. Now you never took soundings of the main channel, did you?

A. In place I have, yes, sir.

Q. When you got stuck you took soundings?

A. No, sir.

Q. What were you taking soundings for?

A. For sailing with deeper boats and fishing.

Q. Can you tell on the map where you took soundings and what the soundings were?

A. Where I took soundings in this channel here?

Q. Yes, sir.

A. Yes, sir.

Q. You can?

A. Yes, sir.

Q. I want to call your attention to the map marked Wisconsin's Exhibit 31-E, which has the legend St. Louis River from Connors Point to Fond du Lac from surveys made under the direction of Captain W. L. Fisk in April and May, 1891, by J. H. Darling, Assistant Engineer, assisted by F. L. Dever. Now I want to call your attention to the soundings here in what you term the main channel between the dotted lines marked dock line to the northerly and dock line to the southerly and call your attention to the soundings four feet one, seven feet naught, seven feet nine, five feet nine. Did you ever find that bar that these engineers found by actual soundings in 1891?

A. Never took any soundings at that point.

Q. But you said there was no place in your opinion that was less than twelve feet in that channel?

A. Yes, sir.

Q. You think your opinion must be wrong or else these engineers must be wrong?

A. I have gone through there with boats that drew more
978 water than that.

Q. Do you mean to say that you never struck this bar if you had a boat drawing twelve feet of water prior to 1893?

A. No; I didn't say that.

Q. Do you say that that shoal wasn't there prior to 1893?

A. I don't know whether it was there or not. Any boat I went up on never struck up there.

Q. Never struck anything?

A. No, sir, not there.

Q. Not there?

A. No, sir.

Q. Now how deep were the boats that you traveled on?

A. I should say they were drawing eight or ten feet of water.

Q. Some drew as high as twelve, didn't they?

A. I couldn't say as to that.

Q. Prior to 1893?

A. Prior to 1893.

Q. Drew as high as ten feet?

A. Yes.

Q. Never struck the bottom?

A. Not at that point.

Q. Mr. Nelson, as a matter of fact, haven't you got this point of time all confused in your mind as to when these deeper boats ran up there and when they didn't?

A. I do not call a boat that drew eight or ten feet of water a deep boat.

Q. And you ran up there prior to '93 in boats drawing ten feet of water, different years, I presume, didn't you?

A. Yes, sir.

Q. A good many different years, did you?

A. Yes. I want to explain one thing.

Q. They will give you a chance to explain.

A. About a boat——

Q. Now, in your hunting and fishing excursions that you
979 have told us about and your running on picnic excursions—Just step down to this other map again—I want to ask you if you saw any boats running on the channel, from A to G, G to B, and from B to C on Minnesota's Exhibit 1? Did you ever see boats making that?

A. This channel here (indicating)?

Q. Yes, sir; that channel there.

A. I have run it myself with a big sail boat but I never saw a steamer go through there. I have seen them go around through this way (indicating).

Q. Did you ever see them come down——

A. Around through the cut-off.

Q. Did you ever see them from E on this red line to F and on to G?

A. Big Pokegama, yes, sir.

Q. You have seen them go there?

A. I have gone there and seen them go there.

Q. And you have seen boats drawing six feet of water going many times on the channel marked A to G, and G to B, and from B to C?

A. No, I haven't.

Q. Never saw them go at any time?

A. I don't recollect that I saw any boats take that course. I would take it myself as a cut-off going up to Spirit Lake.

Q. If these men; that is, the Merritts and the Howards and McManus and Captain Stevens and Captain McDougall, say that that was the channel used by all boats prior to the dredging of the bar in channel H, would you say that they were mistaken, that you were right and they were wrong?

A. If they say all the boats went up that way I would say they were mistaken.

980 Q. I say, boats prior to the time this bar was dredged out in channel H, in 1893?

A. I don't think all the boats would go that way.

Q. Wel-, was that the main channe- that was used by the boats until the dredging was done in 1893?

A. I considered this the main channel.

Mr. Gard: He points to the channel marked H.

Q. I didn't ask you that. I asked you whether this was the channe- that was used, from A to G, from G to B, and from B to C.

A. If that was the main channel?

Q. That was unusually used by the boats, up to the time the dredging was done in 1893?

A. I don't think it was.

Q. Then you think if these men so testified that they are mistaken, do you?

A. I think I am right in my assertion of what I say.

Q. Then you think they are mistaken, do you?

A. Yes, on that, yes.

Q. Now, did you know that Mr. Alfred Merritt navigated these waters at the head of the lakes, did business up and down these St. Louis waters for years prior to 1893?

A. I have heard so, yes.

Q. You knew he was a sailor?

A. No, I don't remember. I think I remember him being aboard of a boat, yes.

Q. He was a master?

A. I didn't know that.

Q. You knew Mr. Ben Howard sailed up there for years?

A. Ben Howard, yes.

Q. Was he captain?

A. I never was up with him up the river as captain.

981 Q. I didn't ask you if you were up the river with him as captain. I wish you would pay attention to my questions.

A. Knew he was captain?

Q. Yes.

A. Yes.
Q. You knew he had master's papers?
A. Yes, sir.
Q. Mr. McManus, did you know him as a navigator?
A. I think there was a tugman by the name of McManus.
Q. You knew he navigated up and down the river?
A. I think he did.
Q. Take Mr. Stevens?
A. I knew him wel-.
Q. You knew he was a captain that navigated up and down there; did a great deal of work there?
A. Yes, sir.
Q. Don't you think that these men would be far more familiar with the channels and the places for boats to run than you would with your picnic excursions and hunting and fishing excursions?
A. Some parts, yes.
Q. Don't you think they would be far more competent to tell where the navigable channels were in these waters than you would be for boats plying up and down there in business?
A. Of my own experience.
Q. Don't you think they would be far more competent judges of where those channels were than you were?
A. Well, where I hadn't been they wou-d, yes.
Q. I am talking about the channels?
A. Yes.
Q. Didn't they go up and down there all the time?
A. Not all the time.
982 Q. What do you uderstand, Mr. Nelson, that you were here for? Are you taking sides? Are you taking a position and sticking to it through thick and thin?
A. I am sticking to my own opinion as to the channel of the St. Louis River.
Q. Have you any doubt as to the competency of Dar. Stevens as captain?
A. I have been with Stevens lots of times.
Q. Have you any doubt of his capacity?
A. No.
Q. And you know that he is familiar and has been familiar with the river and bay for years?
A. I have been with him lots of times.
Q. I didn't ask you that. You know he is familiar, don't you?
A. Yes, sir.
Q. And a competent man?
A. Yes, sir.
Q. Don't you think he knows more about that channel than you do, and the channels——
A. Take them all the way up, he does.
Q. Is there a spot there that he doesn't know as much about as you do?

The Commissioner: Mr. Fryberger, you don't make any headway with that argument with the witness.

A. I have piloted a boat myself for Captain Stevens.
Q. I didn't ask you that. I asked you if there was any particular part of the river that you thought you were more familiar with than he was?
A. Yes, sir.
Q. What part?
A. Close to Spirit Lake.
Q. Spirit Lake?
A. Spirit Lake station.
983 Q. That hasn't anything to do with the channel?
A. Yes, sir.
Q. Is there a bar there?
A. Yes, sir.
Q. A dangerous bar?
A. Tug went on the other day that was supposed to be a good pilot.
Q. Where is it? Let's have that bar. Tell us where that bar is on Spirit Lake?
A. Here is Big Island.
Q. Here is Big Island?
A. Coming down the river they would always pile on here, the tugs that was not acquainted.
Q. That is, to the westerly of Big Island?
A. To the westerly of Big Island.
Q. Do you say that you knew that point better than Captain Stevens did?
A. Yes; for the reason they always took the cut-off.
Q. For the reason he always took the cut-off?
A. Yes, sir.
Q. Did you ever know him to go down the other way?
A. Very, very seldom.
Q. You weren't with him when he came down there one time in a hundred, isn't that true?
A. No, I wouldn't say I was.
Q. Take Albert Swenson; do you know Albert Swenson?
A. Very well.
Q. Lived on those waters practically all his life, hasn't he?
A. He was a very poor man in a boat.
Q. I say, he lived on that shore practically all his life?
A. Yes, sir.
Q. And spent his boyhood on these waters, didn't he?
A. No, sir.
Q. How do you know?
A. Of course he never took to the water.
984 Q. He has testified in this case, and we will assume it is true, for the purpose of his question, that he spent his boyhood days there on these waters fishing and hunting and rafting logs, working on the water?
A. He might have done that. I have known Mr. Swenson since boyhood, you might say, and to be up there with him.
Q. You played in the water and he played on shore?
A. He was mostly on shore.

By Mr. Bailey:

Q. There was some short turns in this channel that you have spoken of was there not?

A. Yes, sir.

Q. Quite short?

A. Which, the main channel?

Q. What you call the main channel?

A. Yes, sir.

Q. A good many of them?

A. Not as short a turn as there was in the cut-off.

Q. I am not asking you that. Were there a good many of those short turns?

A. Not very many.

Q. How many would you say between Grassy Point and the upper end of Big Island?

A. From Grassy Point to Big Island?

Q. Yes; short turns.

A. Well, there was only one short turn.

Q. Where was that?

A. Just after you left Grassy Point in the Big Channel?

Q. What?

A. What we called the Big Island.

Q. There was another one around near Pancake Island, wasn't there?

A. Not so very short.

985 Q. Whenever they got so they had boats six hundred feet long it would have been practically impossible for any such boat to go up around the curves that you have suggested, wouldn't it?

A. Yes; they couldn't go up there.

Q. Couldn't go up there because of the short turns?

A. That is right.

Q. And a four-hundred-foot boat couldn't go up there on account of the short turns?

A. No.

Q. Or a three hundred?

A. No, I shouldn't think so.

Q. Nor two hundred?

A. If they drawed a little water they could. If they were shallow draft.

Q. I am not speaking about the draft now. I am speaking about the length. They couldn't have gone up there on account of the length, could they?

A. I shouldn't think they could.

Q. So as soon as commerce got so it had boats of that length it was necessary to have a straight channel, wasn't it?

A. Yes, sir.

Q. And the straight channel is just about where the Government put it; that's about the only place that it could have been put to accommodate boats of that size?

A. Yes; the new channel made a field of water for the bigger boats.

Q. And that channel you speak of, this red line that you say was sometimes taken, and that you sometimes took, that was a good deal wider than what you called the main channel that twisted up around near the shore, wasn't it?

A. I didn't catch that.

Q. I say, it was a good deal wider, this channel that is indicated on this line, that is, line A-G-B-C—I say, that was a good
986 deal wider than what you call the main channel?

A. This one here (indicating)?

Q. Yes.

A. Yes. That was more spread of water.

Q. A good deal bigger spread between the rushes?

A. Yes.

Q. So that so far as the width was concerned it was much easier for boats to go through that than to twist around in what you call the main channel?

A. It would look that way, yes, sir.

Q. And it was shorter as well?

A. It would look shorter.

Q. What was that?

A. It was shorter if you could navigate it.

Q. And it would be the natural way to go unless the water were deeper in some other place, wouldn't it?

A. It would be the natural way if there was water enough for them to go that way.

Q. That's what I say. If there was as much water in that at the shallowest point as there was in some other channel at the shallowest point, that would be the natural way for them to go?

A. If there had been as much, yes.

Redirect examination.

By Mr. Hudson:

Q. You say that would have been the natural way if there had been water enough?

A. If it had been deep enough.

Q. What was the fact? Was it or wasn't it deep enough?

A. I didn't consider it deep enough.

Q. In your examination by Mr. Fryberger you wanted to explain about a boat going aground. Go ahead and make your explanation now and state what the boat was and what the circumstances were?

987 A. I wanted to explain—we will say that a boat draws eight feet of water; when she is under full speed she would draw close to ten feet of water.

Q. When it is under full speed?

A. Yes, sir.

Q. Well, was there anything about going aground?

A. Sir?

Q. Did you go aground or did you know of a boat going aground, that you wished to explain, or didn't I understand you?

A. They would usually check down if they was afraid of shoal water.

Q. Now, take your sail boat with a centerboard in it. What depth of water would you usually want in order to navigate that boat?

A. With the centerboard down, five to six feet.

Q. Was that the depth of water that it drew?

A. That it drew with the centerboard down.

Q. Would you want any more depth of water if you were going from one point to another?

A. Than five or six feet?

Q. Yes.

A. No.

Q. Well, as a matter of fact, could you get through this short-cut from A to G, and B and C, with boats drawing nine or ten feet of water?

A. I don't think so. This one here (indicating)?

Q. Yes. Did you ever see a boat go through there drawing that much water?

A. No, sir, I did not.

Q. Was there a bar there that interfered with navigation?

A. (No answer).

Q. This was right northwest of this Pancake Island; that is C. I want you to locate yourself by this map, at C; that is, where this red line which Mr. Fryberger says was the course that was
988 taken by navigation, the westerly junction of that, with the main channel, with the H mark?

A. The bars in here?

Q. Now, was there a bar at this point near C in the main channel?

A. I think there was.

Q. What depth of water was there there?

A. Never took a sounding there, but was always afraid of that point, with the centerboard; used to be deeper up in this channel.

Q. Did you ever see anyone aground there at C at that place where there was a bar, where you understood there was a bar near C in the main channel?

A. I can't remember that I can say that now, no.

Q. Was there as much difficulty going here as there would be to go through this course they have marked out on their map Minnesota's Exhibit 1, from C to B, and B to G: was there as much danger over that bar as there was going through this way (indicating)?

A. It is confusing on the map.

Q. This is where you have indicated shallow water in there and here is where they say that their navigators have been in the habit of crossing that junction at C or near that junction at C—going down here or going up the main channel of the river?

A. Less danger going this way.

Mr. Hudson: Witness indicates the original channel marked H.

Q. Have you made any observations as to what part of that channel there the ice went out of first in the spring of the year?
A. Yes, sir.
Q. What part of the waters there did the ice first disappear
989 in and go out?
A. What naturally would call the main channel.
Q. The main channel?
A. Yes, sir.

Recross-examination.

By Mr. Bailey:

Q. You say that you were always in danger when you had your centerboard down going around that bar on what you call the main channel?
A. Yes, sir. In the main channel?
Q. What you call the main channel.
A. No; in a northeaster we always would be against the wind in the main channel.
Q. You don't understand the question. I asked you if you said you always were in danger with your centerboard down when you were going across this bar in the main channel at this point C.
A. Beyond the main channel?
Q. In the main channel as you call it?
A. Not in the main channel there was no danger.
Q. What?
A. I didn't consider there was danger in the main channel.
Q. What bar were you talking about when you said in answer to Mr. Hudson's question you always were in danger when you had your centerboard down in going across the bar? What bar was it?
A. In going up to Spirit Lake when I would take this course here I was always afraid here and would run without a centerboard across into the main channel.
Q. What point was it you are speaking of?
A. I am speaking right through here. There is a shallow spot right through there.
Q. How deep was that?
990 A. There is spots where it is deep and I wouldn't think it was over four feet.
Q. When? What time in history?
A. Before the natural channel was disturbed.
Q. Then you think Meade's map was wrong do you?
A. I don't know what Meade's map says there.
Q. It says not less than seven feet anywhere along there. I put it seven. It says not less than eight.
A. You could find, possibly pick out a channel seven feet, but what width?
Q. You yourself testified it was wider than the main channel?
A. The surface of the water was.
Q. You can find soundings there that show that it is so wide you

couldn't possibly get stuck with any boat you ever went up there with, so far as width is concerned?

A. There was places that I have been stuck there. There is roots and snags and bars there.

Q. When you got around what you call the main channel you say you didn't find any bar there?

A. Not in the main channel; nothing to disturb my boat drawing six feet of water.

Q. You didn't feel in danger at that point in letting your centerboard down?

A. (No response).

Q. You wouldn't undertake to say that prior to the time you came here that the line A-G, B and C, wasn't the main navigated and navigable channel for any craft that went up there prior to the time that you went up there?

A. This here, that that was the main channel?

Q. Yes; main navigated and navigable channel.

991 A. No, I wouldn't consider it.

By the Commissioner:

Q. You say that the main channel was too tortuous to admit of a four-hundred-foot boat going up there?

A. Yes, sir.

Q. Do you know where the new channel is now?

A. Yes, sir.

Q. Was it less crooked than the old channel?

A. It is a very long curve like a bow from Grassy Point up.

992 MARTIN COLE was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Hudson:

Q. Mr. Cole, where do you live?

A. 807 Twelfth Avenue East, Duluth, Minnesota.

Q. How long have you lived in Duluth?

A. About 40 years.

Q. What has been your business during that time?

A. Well, I have been a tug pilot and lake pilot and held other occupations ashore. In the last ten years I have held other occupations ashore.

Q. What are you engaged in at the present time?

A. I am Deputy Labor Commissioner.

Q. For the State of Minnesota?

A. Yes, sir.

Q. How long have you held that position?

A. Three years this month.

Q. How old are you?

A. Forty-nine.
Q. Then you came to Duluth when you were nine years old?
A. Yes, sir.
Q. Are you acquainted with the Duluth harbor and St. Louis River?
A. Yes, I sailed on it for 18 years.
Q. Commencing about what time?
A. Well, commenced about when I was sixteen years of age when I first started.
Q. That would be about 34 years ago?
A. Thirty-four.
Q. In what capacity were you sailing?
993 A. Firing and decking; started in firing and decking on the tugs.
Q. Have you a marine license?
A. Yes, sir.
Q. When was that first issued to you?
A. Twenty-eight years ago.
Q. Have you held that license ever since?
A. Yes, sir; still hold it.
Q. As captain of a tug boat?
A. Yes, sir; boats of 500 tons and under.
Q. I wish you would tell me the first boat that you navigated the waters of St. Louis River with?
A. That is, you mean the harbors here?
Q. Yes, the harbors first.
A. The first boat was the Tug Agate or John McKay, formerly Agate; next was John Upham; next tug John Martin. I went from one of them to the other, all in the same company, in the one year, one season.
Q. What season was that?
A. That was the first season I obtained my license; twenty-eight years ago.
Q. What were you doing on the Tug Agate?
A. I was captain on her.
Q. And you were also master of the other tugs too, were you?
A. Yes, sir.
Q. What business were those tugs engaged in?
A. Towing from the barges in the Duluth harbor; towing scows from the barges.
Q. Will you state where that towing was done?
A. Most of that done in those days was in the Duluth harbor in the basin.
Q. Up how far west?
994 A. Well, it wouldn't go much this side of the Ohio Coal-Dock; sometimes taking out shoals along the old channel along Garfield Avenue there was——
Q. Then what was the next boat that you were on?
A. I was in the Tug John Martin, I think; it was three seasons.
Q. Where were you engaged in running that?
A. I was engaged one of those seasons here and part of the next;

and then part of that season and the next season along the lakes, Ontonagon, Ashland, Marquette, and——

Q. What part of the waters in the Duluth harbor were you?

A. I was in it the next two years after I started in the first place.

Q. How far up the river would you go?

A. Used to dredge all the way along wherever there was any shoals, whenever there was an appropriation, or the engineers directed the dredges to go; took it down into the lake or took it where they were filling a dock. They were building the Ohio Coal-Dock. We took some of it there.

Q. What year was that?

A. I couldn't say what year that was.

Q. Was that all below the Grassy Point?

A. Oh, yes; it was below the St. Paul & Duluth bridge up there, as we used to call it those days.

Q. Did you operate a boat above Grassy Point; have you at any time?

A. Yes, I have on several occasions. I towed vessels up there, some of the first vessels that went up to New Duluth to load lumber; towed them up and brought them down after I loaded, some of them; there was other men working in the same line.

Q. Were you acting as captain of the boat?

995 A. Of the tugs, yes. I was then working for B. B. Inman.

Q. Did you do that more than one season?

A. No. I only towed boats up there one season; that is, up to New Duluth.

Q. What was the capacity of the boats that you towed up there that season, what depth of water?

A. Well, loaded they would draw about eleven foot six up to twelve feet.

Q. How much constituted a cargo?

A. There is different sizes; couldn't say exactly, but as near as I could judge would be anywhere from 450,000 to 750,000.

Q. Would you bring cargoes of lumber, full loads, down from New Duluth?

A. Well, they didn't use to do it unless it was where they were going to get their full load. If they were going to get part of a load down here they would load part of a load there and then finish up after they got down into the harbor.

Q. After that season that you took barges up to New Duluth did you do any tugging on the St. Louis River above Grassy Point?

A. No, not a great deal, no; not to amount to anything.

Q. Have you been up there often?

A. Not before that time; not very often. I have been up a few times. That is, up one channel; and I had only been up the other channel, I guess, up in through the Big Pokegama. I was at work there on that tug Barrett for Mitchell and McClure. Captain was sick and I took a few trips up there with a raft of logs. That was the same time of the Hinckley fire, during the same period. I was on the tug when Hinckley was burning up.

Q. Do you remember what year it was that you towed logs down for Mitchell and McClure?

996 A. No; as I say, I referred to it as the Hinckley fire. The ashes and smoke were so thick that a person wouldn't——

Q. 1894. What course did you take in going up the river to New Duluth and in bringing the lumber back?

A. Bringing down lumber barges.

Mr. Hanitch: What year was that?

The Witness: Twenty years ago last year. I remember that because it was the year I got married that fall, '96; be twenty years ago last year.

Q. (Question read:) "What course did you take in going up the river to New Duluth and in bringing the lumber back?"

Mr. Fryberger: Objected to as immaterial and incompetent.

The Commissioner: You may answer the question.

A. Well, we used to always go up the old channel on the other side of the bay there and around to the head of the Mitchell & McClure Lumber Company docks and the Le Sure Lumber Company, and those people, and hugged those shores and make the turn at Grassy Point and follow that shore up until you get pretty well where that Blast Furnace is and then come around kind of a half circle around that little island and then off to the brickyard and then up along to the far end of that big island; I never learned the name of it, but it's the same island now I know Mr. Whiteside has got his farm on; used to always hug the course along that side.

Q. Will you locate that course with reference to the Minnesota shore?

A. It was what we call the Minnesota side, yes. Whether this side of the channel is the Wisconsin side, I don't know any

997 more than that was the channel; whether it was in the boundary line or not I don't know.

Q. Was that channel nearer the Wisconsin shore than the Minnesota shore?

A. No, it was nearer the Minnesota shore.

Q. How near on an average would it follow the Minnesota shore?

A. Well, of course there were several of the bends it would extend out further than it would on the others. Other places we went up pretty close to the shore. Where you come out around that way towards that Iron Works you would be by the shore again until you made for the brickyard.

Q. Was that course along that channel deep water?

A. Yes, sufficient water to bring down a boat of that draft.

Q. Was there any other water between the Wisconsin shore and the Minnesota shore as deep as that as a channel?

A. As a channel I don't know only the one that was as deep as that, as the channel I knew; there was what they used to call the light draft channel.

Q. Where was that?

A. That used to extend off towards the cut-off, what they used to call the cut-off.

Q. What did you call this channel you have been describing over near the Minnesota shore?

A. That is what has always been described to me as the main channel, as the deep water channel.

Q. What was your observation with reference to other masters of boats taking the main channel up the river?

A. Well, all boats that went up there to load lumber they had to take that channel or they couldn't get up.

Q. Had to take it. Why?

A. Water wasn't sufficient depth in the other channel; in
998 the other cut the water wasn't of sufficient depth that the boat could come down with a load of lumber.

Q. Do you mean the water wasn't of sufficient depth in the channel, or was it reaching the other channel from the head of Grassy Point?

A. In order to reach the other channel there must be one to go in, and the difficulty was getting in and getting out and striking the main river on the other end of that island.

Q. That is between——

A. Between this channel I speak of and taking the cut around in what they call the short-cut.

Q. There was a space there, was there, that the water was shallow?

A. There was a space there the water was shallow, yes, sir.

Q. What was the distance across that space approximately?

A. Well, I really couldn't testify just what the distance was.

Q. Was it a short distance or a long distance?

A. It wasn't a very long distance, but any tug that took vessels up there during my time, during the time I have towed vessels there, the tug itself couldn't get by this shoal going up; and bringing the boat down you couldn't bring the boat through there no matter what kind of a boat you have.

Q. You are speaking of the entrance to the short-cut channel, are you?

A. Yes, sir.

Q. Do you know anything about the cutting out of bogs and marsh from Pokegama Bay there, that is, shallow water by Mitchell and McClure's small draft tugs?

A. No, I do not.

Q. When you towed there for Mitchell and McClure was that the first or second season?

A. No, I think they have been operating there for prob-
999 ably three or four years.

Q. What draft boats did you say went up to New Duluth when you brought down lumber?

A. Well, the boats when I brought them down drawed a good deal more water than they did when I took them up. Schooner when you take it up don't draw as much water as the tug does; probably drawed five or six feet. Coming down they would draw eleven feet, eleven feet six, eleven feet eight.

Q. Did you have any difficulty in coming down the main channel with those boats?

A. Well, we used to come very slow taking the turn, for fear the boat would take a sheer and run into the bank and throw the lumber overboard.

Q. What bank?

A. The channel bank.

Q. Was that channel well defined?

A. It was in the summertime after the rushes grew up, but otherwise it wasn't and it was very difficult to navigate it at all unless the rushes were up.

Q. That was due to the fact of want of knowledge of just where it was located?

A. Yes; it was quite crooked and no ranges established there by the Government that I ever knew of.

Q. Did you ever have any difficulty in navigating it?

A. I can't say that I did. I always went up and I always came back.

Q. Without going aground?

A. Once in a while I kind of rubbed the bank a little but got her over it; never got down so I got stuck.

Q. Where did you regard the mouth of the St. Louis River; where was the mouth of the St. Louis River in your opinion?

1000 A. That, of course, was really something I couldn't say where the mouth of the river was. The only Government mark that I had was the lighthouse on the north pier of the Superior canal. That was designated, as I understood it, as "the St. Louis River pier light."

Q. That is the head of Minnesota Point?

A. The north pier down at the Superior entry. It was on the north pier at that time and now it's on the south pier.

Q. I show you Wisconsin's Exhibit number 1, which is the Meade map, and ask you to examine it and locate yourself with reference to the channel between Grassy Point and the upper river. Now I will ask you to examine that and after you have examined it to point to the channel which you took in bringing down lumber barges?

A. I used to go right around here (indicating), follow right down here.

Q. Witness points to the old channel.

A. There was a little island there some place.

Q. There has been an island testified to there and an island testified to at this point, one there and one here?

A. Used to go around there and around here, on around here and around here and off up this way (indicating); that is the one we used to take the vessels up there.

Q. Was that the deepest watercourse between the island and the Minnesota——

A. That is the deepest channel I knew of. It was called the deep water. This used to be considered a dangerous place in here; come down there and strike that bank.

Q. That is right west of the south end of that island; is that what you mean?

A. Right down this way, because it was a kind of a straight
1001 cut there (indicating).

Q. Have you in pointing this out, have you indicated the red line on Wisconsin's Exhibit 1? Do you see a red line there?

A. On Wisconsin's Exhibit 1?

Q. This is the Wisconsin Exhibit 1, the one the State of Wisconsin has put in evidence.

A. Do I recognize what?

Q. As the channel you have been describing, do you recognize it as being the course of the red line?

A. That looks to be just about the course, yes.

Q. That is, I call your attention to the point on that red line which is near Tollis Island and near the Minnesota shore?

A. Yes.

Q. I think the old brickyard that you have described——

A. There was a brickyard right in there somewhere; we used to head on on this turn.

Q. The channel, did it run near that brickyard?

A. Yes, it ran down close to the shore. It used to come off around here (indicating).

Q. That is the point towards the island?

A. Is that the Big Island where the cut-off is behind it?

Q. Yes. Do you know where the Spirit Lake dock is?

A. There was a dock right up in there somewheres; used to come out here in the rushes—an old dock.

Q. Was that dock near to the channel?

A. Used to come out pretty near to the edge of the channel. It was an old pile dock if I remember right.

1002 Q. Did you ever run through the cut-off or what was known as the short-cut?

A. No.

Q. You never ran through there?

A. No.

Q. Did you always follow the old channel?

A. Always followed this channel.

Q. You know of other light draft boats, do you, going through the cut-off?

A. Yes, I have seen light draft boats going through there, but I was always given to understand there was only about somewheres around seven or seven feet and a half of water.

Q. Do you know of any watercourse that was used after leaving the main channel at the end of Grassy Point, near an island that was called Pancake Island or dry island and to a point where it met the main channel just west of that island?

A. I don't know; if there was any, I don't know unless it was the channel that went up and turned over to the cut-off, to the other channel; I don't know.

Q. That is, there was a way up there?

A. There was a way up in there through the cut-off. I went up there as a passenger on the Henrietta one time when they used to have a stern wheeler on there.

Cross-examination.

By Mr. Bailey:

Q. Then you did go from the southwesterly point of Rice's Point up to Pancake Island when you went the cut-off; you knew of that channel.

A. I knew there was one there because small tugs used to
1003 run in there and get logs and things.

Q. If I correctly understand your testimony you never did any work up above Grassy Point earlier than the year 1894, or the year of the Hinckley fire?

A. No, I never did do any work there.

Q. Practically all the work that you have been testifying that you did coming down with these eleven foot boats was in 1896?

A. 1896 was the year I towed vessels around.

Q. And that was after considerable dredging had been done by the Government on this route you say you took?

A. Well, possibly may—I presume there must have been some dredging done.

Q. Prior to 1894 you were not familiar with the waters above Grassy Point?

A. Not above Grassy Point. My work was down here or down the lakes.

Q. In coming down the river, say from Fond du Lac, when you got to the point at the upper side of Big Island, and by upper side I mean westerly side, you strike in there just at the edge of the island, we will say the northerly edge, flats, didn't you?

A. Well, there was a kind of a flat off here (indicating).

Q. The water was shallow there and the sand and dirt and so forth filled in there, didn't it?

A. No.

Q. There are flat places, aren't there?

A. There is a flat here we always used to keep away from, this turn, and hug across from here.

Q. There had been some dredging when you were there?

A. I presume there had been spots all through it. I knew there had been on the north side of it at New Duluth.

1004 Q. Didn't the water spread out there and isn't the deposit there such as it is at the mouth of a river generally.

A. There is some deposit across there; nothing more than what there is generally on islands; in a great many islands they are that way without a river.

Q. I am speaking of these waters up just to the northerly of Big Island, northerly and westerly of Big Island?

A. Yes, you had to keep away from there and away around down here.

Q. Quite a deposit in through there?

A. Quite a flat all through.

Q. There was a deposit, that is, sand and——

A. I don't know just what kind of material it was; it was shoal water in there.

Q. About what you would find at the mouth of rivers generally?

A. That is, of course, as far as material was concerned, I don't know what kind of material.

Q. I mean so far as deposits are concerned, shoal water and filling in——

A. You find such things at the mouth of a river, yes.

Q. And all that you mean to say about the designation of the mouth of the river is that there was a light-house down on what is known as the Superior entry?

A. The light-house down there was called St. Louis River light-house.

Q. And at that time there were no light-houses up above that further up towards Fond du Lac?

A. No, there was one there on the mainland at Park Point; there was one there on the main land and then there was one at the end of the pier.

1005 Q. What was that one on Park Point used for?

A. It was used for the entrance to Superior entry or St. Louis River entry, whatever they might designate it.

Q. That is the only thing that you ever heard was that that was St. Louis River light-house?

A. They used to call it the St. Louis River peirhead light, but it was always know amongst marine men as Superior entry.

Q. Didn't know it as St. Louis River?

A. It was always generally talked among marine men as the Superior entry.

Q. You don't pretend to say where the mouth of the river is in fact?

A. No, I don't, because so far as the mouth of the river is concerned I always thought I was going in to the river when I struck Grassy Point.

Q. And above Grassy Point the waters spread out in a bay there just as they do below Grassy Point?

A. Spread out, only that the difference is there that the rushes and things grow up on the edge of the channel as they didn't use to do down in the Wisconsin or St. Louis Bay or the Duluth Bay.

Q. Otherwise just the same?

A. Of course there was boggy stuff up around there too, which we didn't have down in either one of these two bays.

Q. That is, about the only difference is that there was rushes grew up through there, indicating the water was not quite so deep?

A. The channel was shallow and that was practically the only place there was deep water.

Q. There was a channel down partway in what you speak
1006 of as lower St. Louis Bay, wasn't there?

A. You mean through the cut-off?

Q. No; I mean easterly of Grassy Point there was a channel part ways, for a little ways?

A. There was a channel as far as the bridge.

Q. Were there rushes on either side of that channel?

A. Yes, until you struck the deep hole. The deep hole was up

near the turn; where I followed the Wisconsin shore to turn around there (indicating) there was deep water. I carried a sixteen-foot pike pole and it was deeper than that.

Q. Easterly of Grassy Point there was rushes along for a ways, were there not?

A. They were in pretty well towards the shore. There was rushes come up in there but they didn't come out as close to the channel as they would along the natural channel going up the river, as we called it.

Q. You know there were a number of channels up above Grassy Point, don't you, up through that bay?

A. There were places where light draft tugs used to go, and the people who had work there to do purchased a tug of that draft in order to do their work, because if they purchased a boat that was of a deeper draft that couldn't be navigated there unless there was a great deal of work done; that is, up these other channels outside of the one I speak of that I used to go up.

1007 Rec'd Aug. 31, 1917. D. E. Roberts, Commissioner.

FEDERAL BUILDING, SUPERIOR, WISCONSIN.
WEDNESDAY, August 15, 1917. 10 a. m.

The taking of testimony was resumed before the Commissioner, Hon. David E. Roberts, at the above time and place.

Present: The Commissioner, Hon. David E. Roberts.

On behalf of the State of Minnesota, Mr. W. D. Bailey, Mr. H. B. Fryberger, and Mr. Louis Hanitch.

On behalf of the State of Wisconsin, Hon. Walter A. Owen, Attorney-General of the State of Wisconsin, Mr. Horatio V. Gard, Mr. Lyman T. Powell, and Mr. T. T. Hudson.

The following testimony was introduced and the following proceedings were had, to-wit:

FRED BENSON, called as a witness by the State of Wisconsin, was duly sworn by the Commission, and testified as follows:

Direct-examination,

By Mr. Gard:

Q. Where do you live, Captain Benson?
A. Live in Duluth, Minnesota.
Q. On Park Point?
A. On Park Point, yes, sir.
Q. How long have you lived in Duluth?
A. Twelve years.
Q. Where did you live before coming to Duluth?
A. I lived near Flint, Michigan.
Q. What is your business?
A. Sailing master on steam vessels.
Q. How long have you been navigating vessels?

A. About forty years.

1008 Q. How long have you been navigating vessels at the head of the lakes?

A. Since '88, about 30 years.

Q. Have you a pilot license?

A. I have.

Q. How long have you had a pilot license?

A. About 40 years.

Q. Have you held a master's license?

A. I always held a master's license, master and pilot.

Q. Have you navigated the St. Louis River any above Grassy Point?

A. I have.

Q. To what extent?

A. I towed nearly all the lumber out of there that was cut by the Richards Lumber Company of New Duluth, along through 1894 up to 1899 and 1900.

Q. That was a sawmill at New Duluth, was it?

A. Yes, sawmill at New Duluth Lumber Company, I think it was called.

Q. What boat did you use in getting that lumber out there?

A. Why, the regular class of lumber carriers, Viking, Finland, Bradley.

Q. What boat did you use in towing?

A. Well, I commenced work up there in the tug M. D. Carrington. After 1895 I was on the tug B. B. Inman.

Q. How much water did you draw?

A. We guaranteed 14 feet ordinary stage of water.

Q. You didn't haul the lumber on your own boat?

A. No.

Q. Simply towed?

A. Simply towed down the schooners and barges to the steamboat, down the bay.

Q. What kind of steamboats went up after lumber?

A. Such boats as the Viking, Bradley and that class of boats, lumber carriers.

1009 Q. How long were they?

A. Oh, they ran about 300 feet, 280 to 300 feet.

Q. And those boats carried lumber down too, did they?

A. Yes, sir.

Q. What kind of sailboats carried lumber down?

A. Sail boats?

Q. Yes.

A. Why, I don't know of any boats that sailed; there was barges that towed behind the steamboats.

Q. Barges and steamboats?

A. Yes, sir.

Q. You don't recall any sail boats then?

A. Why, I think there was one or two went up; I think the Maple Leaf went up, and took a load there, but very rarely.

Q. She was also towed up, was she?

A. Yes, sir.

Q. Did you tow the boats up as well as towing them down when they hauled lumber?

A. Yes, sir.

Q. Now were you up there at work frequently?

A. Quite frequently, yes, sir.

Q. Did you navigate the river any prior to 1894?

A. Why, I made some attempts up there. This firm that I worked for had a good deal of work up there, one kind and another, and they rather encouraged my going up to see if I couldn't get up through there some way with a heavier tug than they were using. They had two little tugs that did this work mostly, and they used to send me up quite often with different tugs to investigate around and see if I could get a channel that we could go up with a heavier tug; they had the Cora B; I used to go up with her.

Q. How much water did she draw?

A. I think about eight feet and a half or nine feet.

1010 Q. Eight and a half?

A. Well, eight and a half or nine feet; it would depend on how she was trimmed, of course.

Q. Were there two courses the boats took above Grassy Point going up the river?

A. There was a sort of channel very light draught used to go up, they called it the cut-off.

Q. That is southerly of Big Island?

A. Yes, have to leave Big Island to the starboard going up.

Q. And what channel did the heavier draught boats take?

A. Why, they took the main channel of the river.

Q. From Grassy Point up?

A. From Grassy Point up.

Q. What channel did you take in navigating the river above Grassy Point?

Mr. Hanitch: When do you refer to?

Mr. Gard: I will fix that later.

Mr. Hanitch: The question is objected to as indefinite, unless the witness states when he is talking about.

(Question was read by reporter: "What channel did you take in navigating the river above Grassy Point?").

The Commissioner: Answer the question by telling which side of Big Island you took.

A. Well, prior to 1893 '94 what navigating I did was either in the main stream up as far as the furnace and no further or was in through the channel at the south side of Big Island or Zenith Island.

By the Commissioner:

Q. What channel do you call the main stream?

A. The channel that passes to the northward of Big Island.

1011 By Mr. Gard:

Q. How did you run when you took the main channel after you rounded Grassy Point?

Mr. Hanitch: Objected to as incompetent, irrelevant and immaterial.

A. After I rounded Grassy Point I stood in about northwest or a little north of northwest by the furnace, one chimney of the furnace and a white building up on the side hill acted as a range for this stretch, and I ran up there nearly to the furnace and then swung around on the starboard wheel to the left past the furnace dock, took this same stack and another building over my stern and went out away from the furnace to a little grassy island, past a little grassy island; this grassy island or near there was close by a bar. Prior to 1893 I had been up this channel as far as the furnace with a schooner of limestone and supplies for the furnace but I had never made any attempt to go out through this bar near this little grassy island, but there was some improving done about that time about 1892 or '3, along there in that little spot, I think they did some dredging and in looking around I found this way up, I used to go up that way.

Q. What was the occasion of your going up to the furnace?

A. Why, they had to have commodities up to the furnace, limestone, coal and supplies, different times, we would go up frequently with scows.

Q. And you frequently went up, did you, to the furnace?

A. Oh, yes.

Q. Went up the main channel?

A. Yes, sir.

Q. Is that channel now partly obstructed by a coal dock
1012 and furnace dock?

A. Yes, sir.

Q. In towing lumber down from the sawmill at New Duluth what channel did you follow?

A. I took what is termed the main channel of course.

Q. All the time?

A. All the time. There was no water anywheres else that you could tow those deep draught schooners through.

Q. Then prior to the time you navigated in hauling lumber down, as I understand it, you had gone up to the Zenith Furnace Company dock?

A. On different errands, yes, sir.

Q. A number of times.

A. Well, yes, a number of times.

Q. And in that you took the main channel?

A. Yes, sir.

Q. And you had also made a number of trips through the cut-off?

A. I had, yes, sir.

Q. That is southerly of Big Island?

A. Yes, sir.

Q. What kind of draught boats?

A. Very light draught boats, drawing about 4 to 5 feet of water. I might say that we frequently got aground with those boats, but of course I have way of knowing whether we were in the best water or not.

Q. But you frequently got aground?

A. Yes, sir.

Q. In going through the cut-off?

A. Yes, with light draught boats, in attempting to go through the cut-off.

Q. In the main channel when you were going up to the Zenith Furnace Company, did you encounter currents?

A. Oh, yes, yes, quite a current up there at times.

Q. Did you encounter any current when you were going up the cut-off southerly of Big Island, that is I mean before you
1013 got to Big Island, did you get currents in that course?

A. I don't remember of ever noticing any current there. There might perhaps have been in high water, in the spring freshet, there might have been some little current in there.

Q. But you don't remember of any?

A. No, I never noticed any current.

Q. Captain, do you know the character of the banks along the main channel that you have described here, as to being abrupt or otherwise?

A. Between Grassy Point and the furnace?

A. Yes.

A. They were very well defined, very abrupt, dropped off very short from deep water into shallow water.

Q. Did that hold good all the way up?

A. Why, the most of the way it did. There were places where it flattened out to some extent and formed bars.

Q. Did you find the main channel defined by reeds generally in summertime.

A. Why, there was places that after the middle of September or before the first of September the banks were clearly defined by rushes growing up, the channel banks.

By the Commissioner:

Q. Was the current stronger around in what is called the main channel on the north side of Big Island when the water was high?

A. Yes, very much stronger.

Q. And what time of the year did you get the high water?

A. Oh, usually in May and June, and a heavy rain at any time in the fall of the year would raise the water and increase the current.

Q. What time did you usually have the low water?
1014 A. Usually August and September.

Q. During the months of August and September was the main channel pretty well defined by the absence of weeds usually?

A. The presence of weeds in the bank, and the absence of weeds in the channel, defined it very clearly most of the way up. There was

6555

places where you located that, particularly them places I mentioned where the sand bars and flats were.

Q. About what time of the year would the weeds or reeds come up through the water?

A. I think they would begin to show by the latter part of July. I was up there the other day and bulrushes are showing very plain now.

By Mr. Gard:

Q. Would you say there were more or fewer reeds some years ago than there are now?

A. Why, really, I don't think I could answer that question. There has been so much improving there and sand has been dumped around different places and filled up. I think there is fewer bulrushes now than there was then. The bulrushes are a distinctive kind of a weed.

Q. They are called weeds commonly, aren't they?

A. Well, perhaps they are.

Cross-examination.

By Mr. Fryberger:

Q. Now, Captain, as I understand it, you didn't attempt to bring down any of these barges of lumber drawing twelve or fourteen feet, or to haul lumber at all, until after the year 1893?

A. I couldn't state exactly the time, but I think it was after 1893.

1015 Q. Well, you stated in your direct examination that it was '94 you started.

A. Well, about '94, '93 or '94, I couldn't say exactly the date. I am inclined to think I started along late in the fall of '93 and brought down lumber.

Q. Well, that was after they had done the dredging up the river?

A. Well, part of it had been done; they did more dredging after I had been towing.

Q. But there had been some dredging done before you started to bring down that lumber?

A. I think there had.

Q. Now that channel you speak of——

A. The main channel.

Q.—that was a very tortuous channel, wasn't it?

A. What?

Q. Very tortuous?

A. Well, it is in a way.

Q. And mariners never attempted to come down there at night, did they, until this channel had been improved?

A. I don't know whether they ever attempted to or not. If they attempted to they never did.

Q. That is your opinion about it. That is until this channel was improved by the government in 1900-1902?

A. Yes, sir, this is the new improvement you refer to?
Q. I am referring to the main channel?
A. Yes, that channel is larger now so we can run it; has limits placed by the government.
Q. Well, then prior to the time you hauled lumber in the fall of 1893 or '94 the few times you went up above Grassy Point you went up to the Zenith Furnace Company.
A. Yes, sir.
Q. In Minnesota Exhibit 1 that would be the channel marked from G to H which I am pointing to?
A. Yes, sir.
1016 Q. You went up as far as the Zenith Furnace Company somewhere to the westerly of H?
A. Yes, sir.
Q. But you never attempted to go any farther until after the bar was dredged out northerly of C, isn't that true?
A. Yes, that is not in that channel.

Redirect examination.

By Mr. Hudson:

Q. Did you have any business at the time you had business with the Zenith Furnace Company, that took you up beyond the Zenith Furnace Company?
A. Nothing that I remember of. There was business that the Company I worked for did up there and they wanted to get my tug up there——
Q. That was a heavier tug?
A. —yes—if I could find my way up so I used to attempt to find the way up through what they called the cut-off. This tug drew eight and a half or nine feet of water. I used to get aground, I got on one night and had to stay there all night, couldn't get up or down or anywhere else.
Q. Did you ever get stuck in going across from the end of Grassy Point west, get out of the channel which you have described as the main channel?
A. Out of this main channel?
Q. Yes.
A. Why, yes, I have been stuck all over there.
Q. Did you ever get into this pocket here?
A. Why, I don't know whether I did or not.
Q. Did you ever get off into a pocket that was off about west of the channel between Grassy Point and Wisconsin?
A. I did going up a very thick morning, I was taking the steamer Bradley up.
1017 Q. Will you relate what happened there at one time?
A. Why, they authorized me to make the attempt, they thought I could get up, seemed to be so anxious to get up there, so I started and I couldn't see anything it was so blessed thick, I couldn't see anything at all.

Q. Will you point where you got in?

A. I managed to get up around here and I judged I was around the end of Grassy Point and fetched up on the bottom.

Q. How far did you go in there?

A. I don't know, a short distance. We tried to get out in every way, backed and turned around and sounded, and pounded around with the tug until it cleared up and then I discovered that I was off to the west of the channel which would be probably this little pocket to the west of Grassy Point; it cleared up and I could see my ranges. I tried every way with the tug but we couldn't get any place.

Q. Why didn't you go right on through?

A. Why, we couldn't go in here any way; we tried and sounded and pounded around and tried every way with the tug but we couldn't go but when it cleared we found a hole from the main channel we come in and we backed out again.

Q. Referring to Minnesota Exhibit number 1 I call your attention first to Grassy Point and then to what you have described as the main channel with H on it; then there is a red line marked A-G-B and C. I will ask you if it was at that point that you got in there with the Bradley, that is, on the line of Minnesota Exhibit number 1 marked G-B.

1018 A. I couldn't state positively in regard to that line.

Q. Did you try to get through——

A. Oh, yes, we were there an hour.

Q. Did you try to get through to the west along the line of B?

A. Yes, sir.

Q. How far did you go about?

A. I should judge probably not over a thousand feet.

Q. And — did you finally have to do?

A. We turned around and came out the same hole we went in and got into the main channel again.

Q. Now in going up the short-cut that you have testified to you say you had light draught boats, four or five feet you say?

A. Yes, sir.

Q. Well, what was the depth of the draught of those boats?

A. We had one boat called the Sutton, I think she drew about four feet of water and there was another little boat the Alida, I think she drew about six feet of water, or five feet.

Q. I will ask you to look at this map Minnesota Exhibit number 1 and call your attention to the main channel at the end of Grassy Point and ask you to show us the course that you took in going up the river.

A. I guess you have got the best of me. I was pretty young at that time, I wasn't experienced up there. We used to try every conceivable course to get up. We steered about straight west from Grassy Point, the main channel from the end of Grassy Point and then we came to a little green island there, we passed southerly of the island, or left the island on our starboard side, or we

1019 passed to the starboard of it going up; when we got to the island there was a clay bank right along there on the north-

east corner of Big Island, we used to steer towards that clay bank until we got up within about half a mile off the clay bank, and the channel was up then what is marked here Pokegama Bay.

Q. Then did you follow that channel around to the south of Big Island?

A. Yes, we followed this, yes, south of Big Island, what we call Devil's Elbow, the main channel.

Q. Well, did you have any difficulty in getting through?

A. Between this main channel at Grassy Point and this little green island, this little grassy island I mentioned.

Q. Was the difficulty near the main channel at Grassy Point or near the island?

A. It was nearer the main channel at Grassy Point. In my experience up there I never got much farther.

By the Commissioner:

Q. About how much would the river rise at high water, say around that channel north of Big Island?

A. Well, according to the best of my recollection and observation an ordinary freshet would raise it about two feet. I presume it rose higher than that. I don't know that I ever observed it.

Q. Could you get across that bar above the Zenith Furnace Company at high water, or couldn't you?

A. I never tried it. I have an idea that you could get across that bar, I think we could have crossed there prior to having the dredging done had we known how to do it at that time and made
1020 the attempt. That bar was a peculiar formation; it was mostly sawdust and refuse from the mills and silt of course from the river bottom and some of this bog, this growth of roots and grass and stuff had stuck in there for some reason, the geographical formation was such as to form a sort of eddy and the stuff floating there had very little specific gravity and I frequently noticed the lead would only show about 12 or 13 feet of water and we would go over with a 14 foot boat. She would stop a little but by working our wheel, dredging we called it, keep working the wheel and the stuff would break up and finally we would work through.

Q. About how wide was the bar?

A. I don't think it was over two or three hundred feet, very small in places.

Q. When was that taken out, do you know?

A. It never was taken out. There was some improving done. Oh, well, I say it was never taken out, I think that when they made the last big improvement, straightened the channel, I think it was taken out, but there was some improvement, I think there was a dredge there in '92 or '93 that improved the bar so we got through; by working there we found where the channel was and of course we went through with the tug.

By Mr. Hudson:

Q. The boats you wanted to go through the bar with would draw

what water, how much water did you require to get through in the business you were in?

A. When we used it?

Q. When you wanted to use it.

1021 A. Why, if we had a boat drawing fourteen feet we required fourteen feet of water to go through. Of course it depended on the draught of the boat we were taking up or down.

Q. You say you never attempted to get through there until it was dredged?

A. No, but I have an idea now after going up that we could have got through before it was dredged.

Q. You could have got through with your boats?

A. Yes, I think we could have kicked the boats through with our wheel. The nature of the bottom was such that it was easily kicked away, sawdust and stuff there.

Recross-examination.

By Mr. Fryberger:

Q. There wasn't any sawdust in that bar prior to the time there were sawmills located up there to make sawdust?

A. I should judge not.

Q. Well, as a matter of fact prior to the time the dredging was done in 1893 by the government you don't know what the formation was of the bar?

A. I suppose it was the same it was afterward.

Q. When you spoke about coming down and kicking up the stuff with your wheel and seeing the formation, that was stuff that was deposited there after the bar had been dredged, is that not true?

A. Well, no, I don't think so. I think that was stuff that had been deposited before the bar was dredged but escaped the dredge on account of being of light specific gravity, it drifted to one side and escaped the dredge.

Q. Well, did you ever look at these old government charts

1022 showing this bar long before there was any dredging, or sawmills there?

A. No, I never did.

Q. Didn't old mariners know that bar for 25 years?

A. I don't know.

Q. There was a bar long before the sawdust was there?

A. I don't know; perhaps there was.

Q. When were the sawmills built?

A. You have got me. They were built long before I went up there; there was one mill at a point——

Q. Millford?

A. I think it was Millford. It had been worn out and thrown away for years, I suppose.

Q. That was where the Zenith Furnace is now?

A. Above the Zenith Furnace as I understand it.

Q. Well, you never attempted to cross that bar as you state until after it was dredged out?
A. I did not.

By Mr. Bailey:

Q. That channel you say you followed up there was pretty crooked, that is there were a good many turns in it?
A. The channel I towed the boats through you are speaking of?
Q. Yes.
A. What we called the main channel?
Q. Yes.
A. Pretty crooked, yes.
Q. And that was true from Grassy Point up to Indian Point or Millford?
A. Yes, that is true.
Q. It would be quite impossible for steamers such as are used nowdays to get up there on account of the turns?
A. No trouble at all.
Q. On account of the length, 600-foot boats?
A. Yes, sir.
1023 Q. Well, pretty short turn?
A. Well, a 600-foot boat will make a pretty short turn; I am positive a 600 foot boat if she is light draught enough would go up there as far as the turn is concerned. The boats I speak of used to come down in from two and three-quarters to three hours; that is pretty fast going.
Q. Well, the proper place to put a deep water channel is right where the government put it, or approximately there?
A. Oh, yes.
Q. And that straightened out the line of navigation of course?
A. Yes, very much.
Q. And made it much more direct and easy to haul boats of any length or draught?
A. It shortens the distance, yes, sir.

By Mr. Hudson:

Q. At Knife Falls and Cloquet there were lumber mills built many years before there were on the St. Louis River, weren't there?
A. I understand there was; I couldn't say positively of my own knowledge; I don't know when they were built.
Q. Well, you know when the dam broke up there and let down the logs, don't you?
A. Oh, yes, yes.
Q. Well, that was back long before '93, wasn't it?
A. No, not very long before that.
Q. But it was before '93.
A. Yes, I think it was.
Q. And that dam that broke was on the St. Louis River at Cloquet, wasn't it.
A. I don't know,

1024 J. P. BURG, called as a witness by the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Hudson:

Q. Where do you live?
A. Live in Duluth.
Q. And how long have you lived there?
A. Thirty years, thirty-two or three.
Q. Where did you live prior to that time?
A. In Superior.
Q. Were you born at the head of the lakes?
A. I was born here at Superior.
Q. And how long have you lived in Superior?
A. Twenty years, that is about.
Q. About twenty years in Superior and about thirty years in Duluth?
A. Yes, sir.
Q. You are familiar with the territory in the vicinity of Duluth and Superior and the waters for many years, aren't you?
A. Yes, sir.
Q. Are you familiar with the waters of the St. Louis River?
A. I am.
Q. St. Louis Bay?
A. I am.
Q. The Duluth harbor generally?
A. Yes, sir.
Q. When did you first become acquainted with these waters, when did you pass over them, what were the circumstances?
A. The first time?
Q. Yes. I don't mean the first time.
A. I suppose I could answer that, about forty-five years ago.
1025 Q. Well, what part of them did you pass over?
A. Well, from Central Park in Superior to what they call Milford Bay.
Q. Milford Bay on the Minnesota side?
A. Minnesota side of the St. Louis River.
Q. What business had you that took you from Central Park, Superior to that point?
A. Well, my father lived here in Superior and had a homestead on the north shore.
Q. Whereabouts was that homestead located?
A. That was located right at the foot of the incline going up the hill to Proctor.
Q. That is the incline at West Duluth?
A. Yes, sir.
Q. Where was that located with reference to Grassy Point?
A. Well, Grassy Point was right above that; we used to go in right below Grassy Point with our row boats.

Q. Did you often go across there?
A. To Milford Bay?
Q. Yes.
A. Yes, we did quite often.
Q. Well, how did you reach Milford Bay, did you reach it with boats?
A. We both reached it with boats and walked it.
Q. That was about forty-five years ago?
A. Well, that was when I was a child, yes, with my brothers——
Q. Well, how familiar have you been with the bay and St. Louis River since that time?
A. Well, I was on it continually after that until I was twenty-three or twenty-four years of age.
Q. How far up would you go?
A. Well, we would go up as far as what we called at that time the Devil's Elbow.
Q. Will you locate that?
A. That is at Big Island, up there right above Big Island.
Q. That is the south end of Big Island?
A. Yes, sir.
1026 Q. Did you often go up there?
A. Yes, quite often.
Q. How would you get up?
A. My brother-in-law sailed the tug Nellie Cotton and of course I was a kid and was with him a great deal and they towed logs up and down there different places.
Q. The Nellie Cotton?
A. Yes, sir.
Q. Well, will you state about how many years you were engaged in that?
A. I suppose that would be from about when I was ten until I was fifteen years of age.
Q. Then after you were fifteen years of age what time did you spend on the river?
A. Well, not a great deal until I was twenty or twenty-one.
Q. You may state where.
A. Well, I started firing on tugs and steamboats, one thing and another, and we used to go up and down quite often.
Q. Where?
A. Up the St. Louis River.
Q. How far?
A. Up as far as New Duluth.
Q. Will you state about the time that you were going up there that you are testifying to now?
A. You mean the time of year?
Q. No, the year or years.
A. Well, now as close as I can figure it it was about '78, 1878 and '79 on the steamer Ossifrage.
Q. Was that an excursion boat?
A. That was passenger and excursion.
Q. How many times did you go up on that steamer?

A. Oh, I suppose probably a dozen times, ten or twelve times.
Q. During what years?
A. I think that would be 1878.
1027 Q. Well, did you travel that many times upon that steamer that one year?
A. Yes, sir. That is about, you know; I ain't definite on that.
Q. How much water did that boat draw?
A. About nine feet.
Q. How many passengers did she carry?
A. She carried a lot of passengers, a couple of thousand all that could get on. She was a big boat.
Q. What course did you take in going up the river on the steamer Ossifrage?
A. Starting from where?
Q. Well, starting from wherever she started down here, or from the gateway between Rice's Point and Wisconsin.
A. Well, we come up the north side of the bay to Grassy Point and headed around down towards Milford Bay and then up the north shore to Big Island.
Q. Did you follow a channel in going up there?
A. I presume so.
Q. Well, did that boat go up that way each time you were on her?
A. Yes, sir.
Q. How near the Minnesota shore was it?
A. Well, quite close in places.
Q. You say that was in '78?
A. Yes, sir.
Q. But you are not very sure about the year. What other boat did you travel on, if any?
A. Well, then I was on the Nellie Cotton after that. We went up and down there all the time.
Q. Did the Nellie Cotton take the same course up the river that you have described as going up on the Ossifrage?
A. Yes, sir.
Q. That was after 1878 that you went up there on the
1028 Nellie Cotton?
A. Yes, sir.
Q. What other boats, if any, after that did you traverse the river on?
A. Oh, I went up there after that on different boats, on the tug Abbott and the tug Helm and a lot of different boats.
Q. Well, were you very often on the river after that?
A. Yes, I was two years on the Nellie Cotton after the season I was on the Ossifrage.
Q. What were you doing on the Ossifrage?
A. Firing.
Q. And on the Nellie Cotton?
A. Same thing.
Q. You were firing on the Nellie Cotton?
A. Yes, sir.

Q. And that would be some time in the '80's, early part of the '80's that you were on the Nellie Cotton?

A. Yes, sir.

Q. Well, what other boats after that?

A. Well, I was on quite a few different boats in the Inman Tug Line, you know.

Q. In what years?

A. Well, previous to that, you know, and after that.

Q. Were you employed on this line?

A. Yes, sir.

Q. In the same capacity as fireman?

A. No, engineer, I was on the tug Ada Barrett as engineer for two seasons and towed logs down the river.

Q. From what point did you tow logs?

A. From Pokegama Bay.

Q. Who did you tow those for?

A. Mitchell & McClure.

Q. Did you tow logs the first year that Mitchell & McClure were running at the head of Pokegama Bay?

A. I did not.

Q. Not the first year?

A. No, sir.

Q. What years did you tow logs there?

1029 A. Well, now, I can't just exactly tell when. It may have been either the second or third year after they started in business there.

Q. And where did you bring those logs?

A. Down to the mill.

Q. Where was the mill located?

A. It was here below Grassy Point.

Q. On this side of Grassy Point near the railroad?

A. Yes, on the lower side.

Q. Those logs were brought down in rafts, were they?

A. They were.

Q. And what course did you take in bringing them down from the head of Pokegama Bay? Can you point out on this map Wisconsin Exhibit 1. Now from wnat point on Pokegama Bay did you tow logs and what direction did you take and where did you land them?

A. We came out here and came——

Q. "We came out here." That means the central part of St. Louis Bay?

A. Well, anywhere in around to get the logs. It didn't make any difference as long as we could get them and bring them out here.

Q. This is Grassy Point.

A. This is Grassy Point right down here in this direction. Well, coming out of the bay it would be about that direction.

Q. Then you would swing in what direction?

A. Right down about in this direction to get in the corner of Grassy Point.

Q. In what compass direction is Grassy Point from Pokegama Bay?

A. Well, about northeast. That is the line we always took to bring the logs down.

1030 Q. What draught of boat or tug did you use in bringing the logs down?

A. Well, the Barrett drew about six and a half feet of water.

Q. Did you ever have any difficulty in getting down?

A. I corduroyed it along there lots of times, we bumped the bumps.

Q. What do you mean by that, corduroyed?

A. This in here was very shallow water——

Mr. Hudson: The witness points to the curved line*d* in a northeasterly direction, or easterly from a point near the end of the deep water channel shown on the Meade map between the island and the extreme north point of the Wisconsin line which is east of Pokegama.

Witness (continuing): Well, the bottom was very lumpy, logs, sticks and mud, roots and everything else there, and we would often jump them, you know, run across it with the tug.

Q. That is in crossing over you would touch the bottom of it?

A. In low water, and any water we often had trouble there.

Q. Well, what was the nature of the surface above that?

A. Well, much of it was weedy and grassy. Years before that it was boggy, weeds growing up through there, and most of that stuff along in there—most of that bog and stuff along in there was washed out there in '76 or '77, as near as I can remember and floated down the bay, and rested but it was never solid on the bottom, it was boggy, and a lot of that came out of there, and after the stuff came out there the tugs kicked a channel up in there in order to get into this Pokegama.

Mr. Hudson: The witness points to a line marked with a
1031 pen in dark ink leaving the main channel at the letter D. Witness now points to the main channel between Wisconsin and Grassy Points and states——

Mr. Bailey: I object to such a statement on the record.

By Mr. Hudson:

Q. Did you go in a westerly direction from here?

A. Well, just a little east.

Q. Well, what direction did you go?

A. Well, we might make it straight then in this way.

By the Commissioner:

Q. What compass direction?

A. You couldn't use a compass, it was impossible to use a compass.

Q. You couldn't follow a straight course?

A. No, you couldn't not for any distance.

Q. You had to work your way through?

A. Work our way through.

Q. In any direction you could see an opening?
A. Yes, that was the idea.

By Mr. Hudson:

Q. Well, for what distance from the main channel where you left the main channel, or the head of Grassy Point, what distance did you have to work your way through?
A. Well, I should judge about three-quarters of a mile as near as I can state.
Q. Is that where you kicked your way through?
A. Yes, sir.
Q. What did you do in kicking your way through? What do you mean by that?
A. Well, kind of worked the tug, the wheel, and roots and stuff would loosen so the current would take them away.
1032 Q. How did you work them out?
A. With the wheel of the tug.
Q. That is you kicked them out with the wheel of the tug?
A. Yes, sir.
Q. Was that bog over the sunken logs that you have testified to?
A. Yes, there were sunken logs through that bog.
Q. Did you ever see any of the bogs worked out with the wheel of the tug?
A. Lots of it.
Q. Did you do it with the tug you were using?
A. Yes, sir.
Q. What was the distance across this corduroy that you describe, sunken logs?
A. Oh, about 300 feet, 200, between two and three hundred feet where we would touch the bottom going across.
Q. The bog and little island that you mentioned were above that stuff that had been cut out?
A. Yes, sir.

By the Commissioner:

Q. How did you work there, stern foremost?
A. Any old way we could get through there, sometimes stern foremost and sometimes the other way, the wind and current would have a great deal to do with it in taking the stuff after it was loosened up, down the river and away.

By Mr. Hudson:

Q. In traveling the main channel of the river did you find any bog or corduroy?
A. No, sir.

By the Commissioner:

Q. On which side of Big Island was the main channel that you speak of?
A. On the north side.

By Mr. Hudson:

Q. This place that you have described as corduroy that you
1033 passed over with boats and that you kicked the channel through, can you locate that in a direction from some point, say from the point of land of Wisconsin which is east of Pokegama Bay, can you locate it with reference to that point by a direction?

A. Well, just about west of Billings Park.

Q. Well, can't you locate it with reference to some other point? I don't know where Billings Park is, with reference to the end of Grassy Point, I know where that is.

A. Well, I would say about west, southwest of Grassy Point.

Q. You have described having gone up the main channel north of the Big Island. Can you locate that on the map, do you think?

A. I think so.

By the Commissioner:

Q. Did you ever go to Fond du Lac, Mr. Burg?

A. Yes, sir.

By Mr. Hudson:

Q. Was it large draught boats that you took up this channel?

A. Good size.

Q. Well, was it the largest draught boats?

A. The largest we had at that time.

Q. I show you Wisconsin Exhibit number 1 and ask you to examine and ask you to follow the course that you have described as the main channel from the channel south of Grassy Point that you took in going up the river?

A. This line is all right. That is the main channel.

Q. That channel with the red line on it, is that substantially correct?

A. Yes, that is all right.

1034 Q. And that is the channel that runs between Big Island and the Minnesota line?

A. Yes, sir. We never had any trouble up here, we never had any trouble going up the river after we passed Big Island.

By the Commissioner:

Q. The channel was well defined all the way up west of Big Island?

A. Yes, sir.

Cross-examination.

By Mr. Bailey:

Q. The channel up above Big Island was comparatively narrow, wasn't it, and the bank well defined?

A. Yes, sir.

Q. And the water quite deep?
A. Yes, sir.
Q. And as you were coming down the river from Fond du Lac, as you got to the head of Big Island, why, the water spread out?
A. The water was spread out more in places.
Q. There were deposits or shallow places all through the bay below that, were there not?
A. Yes, sir.
Q. So that you found a good deal more difficulty there in getting stuck and in finding the channel at all?
A. Yes, sir.
Q. And the waters below the point I have just spoken of, that is at Big Island, spread out a good deal more than a mile in width, didn't they?
A. Well, that is what you call the marshes, the marshes.
Q. Well, I mean between the banks, between Minnesota and Wisconsin, are considerably more than a mile?
A. Yes, sir.
Q. Pretty nearly two miles in places?
A. Oh, yes, pretty near.
1035 Q. And all over that you find more or less deposits, sand bottom, bog, muck and shallow places in many portions?
A. Yes, sir.
Q. What year were you born?
A. 1866.
Q. So you are now 51 years old?
A. Not quite.
Q. Now you used the expression that going up westerly of Grassy Point you presumed they followed the channel. Now you meant by that, I take it, that you were not navigating the boat yourself.
A. No, I was not.
Q. You were not navigating it?
A. No, sir.
Q. And because you got up the river, up to Fond du Lac, you presumed you followed some channel to get there?
A. Yes, sir.
Q. But you did not pay any particular attention in those days to the channel yourself, that is you were not navigator?
A. No, I wasn't navigator.
Q. And you just concluded in a general way that you must have followed some channel in order to get up there?
A. In order to get up there, yes, sir.
Q. Now you said you were about 21 years old, if I understood you, when you became engineer?
A. Well, that is when I was firing. I was older than that when I became an engineer, 22 or 23.
Q. When you were firing you were 21 years old?
A. Yes, sir.
Q. That was about '87?
A. Yes, sir.

Q. And prior to that time the trips you had made up there were not really in a business way to speak of?
A. Oh, no.
Q. Just going up there as a boy?
A. Running up there as a kid.
Q. So that about '87 is about as early as you went up there
1036 in a commercial way?
A. Yes, sir.
Q. And how long were you firing after that?
A. About three years.
Q. And then you became an engineer?
A. Yes, sir.
Q. So it was about 1890 or '91 when you became an engineer?
A. Yes, sir.
Q. Now this steamer Ossifrage that you speak of, that was a lake boat, wasn't it?
A. Yes, sir. That is, she was an excursion, passenger and excursion boat.
Q. Well, it plied nearly all the time on the lake, that is the main body of the lake, beyond the Superior entry?
A. Oh, yes, out on the lake.
Q. Where did it ply mostly?
A. Why, her business was between Duluth and Port Arthur.
Q. You never had any difficulty at all in finding a channel above Big Island?
A. We never had any trouble on that boat about the channel.
Q. That was well defined up there, the banks were well defined?
A. Well, the navigator, the captain seemed to know his business.
Q. I say the banks were well defined up there?
A. Yes, sir.
Q. It was not any matter of finding out whether there were banks below water but there you could see them above water?
A. Yes, you could see them.
Q. The character of these waters above Grassy Point up to Big Island were about the same as the character of the waters below Grassy Point, between that and Rice's Point, weren't they?
1037 A. Well, they aren't the same because they——
Q. Well, except there was a little more growth above Grassy Point, that is all?
A. Yes, that is the only difference.
Q. In both cases they spread out in a broad expanse?
A. Yes, sir.
Q. And in both cases there were places that were deeper than others of course?
A. Exactly.
Q. And both places there were in certain spots what you might call channels that extended for some distance?
A. Oh, yes.
Q. And in other places shallow water?
A. Sure.
Q. So that except as to there being more growth, I mean vegetable

growth, above Grassy Point, they were substantially the same until you got up to Big Island?

A. They were.

Q. You never held a master's or pilot's license, I take it?

A. No, sir.

Q. And even from 1890 on you were simply an engineer?

A. An engineer.

Q. And didn't pay any particular attention to routes or courses? That wasn't a part of your business?

A. No, that wasn't my business.

Q. And you were about twelve years old when you say you went up on the steamer Ossifrage at that time?

A. More than twelve years old. No, I was on the Nellie Cotton.

Q. How old were you when the steamer Ossifrage went up there?

A. I must have been 20 or 21 years of age, along there.

1038 Q. Perhaps I misunderstood you. I have a note here that you claimed to go up on the steamer Ossifrage about the year '78. Probably you meant '88.

A. No.

Q. Well, you said '78, I am very sure.

A. I must have been twenty.

Q. Well, that would be '87 or '88 then.

A. Yes.

By Mr. Fryberger:

Q. You are a grocery clerk at the present time?

A. I am, yes, sir.

Q. How long have you been a grocery clerk?

A. Nine or ten years.

Q. You are clerking in a retail grocery store in Duluth?

A. Yes, sir.

Q. And have been for nine or ten years?

A. Yes, sir.

Q. Now you said in your direct examination by Mr. Hudson that you went up the river in the Ossifrage in '78 or '79, didn't you?

A. Yes, sir.

Q. Well, that is not true, is it?

A. Why isn't it?

Q. Well, I say it isn't true, is it, that you went up there in '78?

A. Oh, yes, I think it is.

Q. In 1878 or '79 on the Ossifrage?

A. I think it is.

Q. You have a pretty good memory?

A. I think so.

Q. Well, don't you know that the Ossifrage didn't come here until ten years after that, never even came to the head of the lake until ten years after that, don't you know that is a fact?

A. No, I don't.

1039 Q. Don't you know that the Ossifrage drew between twelve and thirteen feet of water?

A. No, sir.
Q. You don't know that?
A. No, sir.
Q. How much did she draw?
A. About nine feet.
Q. She was owned by the Inmans, wasn't she?
A. Yes, sir.
Q. Captain Inman himself didn't come here until 1885, did he?
A. I don't know.
Q. Well, don't you think the Inmans would know what kind of a boat she was and when she came here?
A. Certainly.
Q. Doc Inman would know all about it, wouldn't he?
A. Certainly.
Q. And that as a matter of fact she drew between twelve and thirteen feet and never drew any less, isn't that true?
A. No, sir.
Q. Didn't that boat stay here two years and then as she didn't pay they had to get rid of her?
A. I don't know that. She stayed about two years.
Q. And she didn't come back until the World's Fair year?
A. Yes, she came back.
Q. And Ned Smith and John Fee got hold of it?
A. Yes, sir.
Q. And tried to run it between Duluth and the World's Fair, that is, Chicago?
A. Yes, sir.
Q. And they made a failure of it?
A. I don't know.
Q. And as a matter of fact the Ossifrage prior to the time the channel was dredged never went up the St. Louis River above Grassy Point?
A. Oh, yes, I think so.
Q. Well, the Inmans would know whether she went there
1040 or not, wouldn't they?
A. Well, they ought to.
Q. And yet you say you went up on her in '78 or '79?
A. Well, I went up on the Ossifrage. Now I ain't got them dates exactly.
Q. Well, you are off about ten years.
A. Well, I don't know, ten years.
Q. But as a matter of fact it was none of your business to pay any attention to channels on these boats? You never took soundings?
A. Yes, sir.
Q. You had all you could do to keep your fires when you were firing?
A. Sure.
Q. And you had all you could do to run the engines when you were engineer?
A. Sure.

Q. When did you first learn that they wanted you as a witness in this case?

A. Last Monday.

Q. Whom did you talk to about it?

A. I don't know who the gentleman was that come and subpœnaed me.

Q. Well, have you never talked with anyone before they subpœnaed you?

A. Yes, sir, I talked to John Howard.

Q. Well, who else did you talk to besides John Howard?

A. And I talked to John Bardon.

Q. When did you talk to John Bardon?

A. Oh, about the same time, a day or two, I think, before I talked to Mr. Howard about it.

Q. And he told you about what they wanted to prove in this case, didn't he?

A. Yes, sir.

Q. John Bardon?

A. Well, both of them.

Q. And they told you about the channels, John Bardon did?

1041 A. Yes, sir. Not John Bardon.

Q. John Bardon didn't tell you about the channel?

A. No, sir.

Q. John Howard did?

A. Yes, sir.

Q. John Howard knew all about those channels, didn't he?

A. He thought he did.

Q. You don't claim that you knew where those channels went, do you?

A. Yes, I do.

Q. Of your own personal knowledge?

A. Yes, sir.

Q. But you never took any soundings?

A. No, sir.

Q. Never your business to find out where the channels were?

A. No, sir, any more than riding on the bay.

Q. The only time you ever talked to John Howard was when Mr. Bailey and John Howard were talking to you together, isn't that true?

A. Yes, sir.

Q. Mr. W. D. Bailey?

A. Yes, sir.

Q. They talked to you about three minutes, didn't they?

A. Three or four, not very long.

Q. They came to the conclusion, and told you so, that you didn't know very much about that river?

A. No, they did not.

Redirect examination.

By Mr. Hudson:

Q. You didn't agree with them, is the reason, wasn't it, as to where the channel was?

A. Well, I told them what I thought about it and they told me what they thought about it and that was all there was to it.

Q. Well, then you didn't agree?

A. I don't know what they thought about it.

1042 Q. Well, you say they told you what they thought about it?

A. Well, they said which way they thought the channel was but I don't know what they wanted to show.

Q. Then you told them which way you thought?

A. Every man has a right to think as he likes.

Q. Please answer the question. You told them where you thought the channel was?

A. Yes, sir.

Q. And did you tell them the channel was where you testified to here?

A. Yes, sir.

Q. Now you say the boats that went up the river above Big Island didn't have any trouble in keeping the channel. Did they have any trouble in coming below Big Island down the north side?

A. I don't understand.

Q. You testified that the boats did not have any trouble in going up the river above Big Island. Now I want to know if the boats in coming down the channel below the upper end of Big Island, coming down to Grassy Point, if the boats had trouble.

A. Not any trouble to speak of when I was on.

Q. When they came down the channel, down the north side of Big Island between that and the Minnesota shore, they never had any trouble?

A. Not that I know of.

Recross-examination.

By Mr. Bailey:

Q. You say you did get stuck along there below Big Island?

A. No, sir.

Q. Well, what did you say a little while ago that there was no difficulty in finding the channel above Big Island but there

1043 was difficulty below it?

A. Well, I didn't say we got stuck; I said I have seen boats stuck.

Q. What you mean is that there was difficulty generally in finding a channel below Big Island?

A. Yes, sir.

Q. And it was difficult to tell where it was best to go below Big Island but not above?

A. No, not above.
Q. But there was below?
A. Yes, sir.

By Mr. Fryberger:

Q. You have been a grocery clerk in a retail grocery store in Duluth a great deal longer than ten or twelve years?
A. No, sir.
Q. Isn't it just fifteen years?
A. No, sir.
Q. What did you do before you went into the grocery business as a grocer's clerk?
A. I was steamboat engineer.
Q. All the time?
A. Yes, sir.
Q. Do you fix that time that you went in as a grocery clerk from any date that you have, or is it your recollection?
A. Well, just my recollection.
Q. You work for Gasser, don't you?
A. Yes, sir.
Q. In Gasser's store all the time?
A. Yes, sir.
Q. Went in as a clerk for Gasser?
A. Yes, sir.

(Recess.)

1044 JOHN OJIBWAY, called as a witness by the State of Wisconsin, was duly sworn, by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Mr. Ojibway?
A. At present at Cloquet.
Q. How long have you lived at Cloquet?
A. Very near four years.
Q. Cloquet, Minnesota, that is?
A. Yes, sir.
Q. Where had you lived prior to moving to Cloquet?
A. Superior.
Q. How long had you lived in Superior?
A. About all my life excepting about ten years.
Q. Where did you live during those ten years?
A. Six years in St. Paul, and three years in St. Paul prior to that, and one year in Duluth.
Q. When was it you lived in St. Paul?
A. That was 1885, 1884, I went in to service there in the marshal's office.

Q. You are half Chippewa Indian?
A. Part.
Q. Where were you born?
A. Superior.
Q. What part of Superior?
A. So-called Old Town at present.
Q. How old are you?
A. Well, according to the baptismal records I was fifty-eight past, fifty-eight the tenth day of last July.
Q. What has been your business generally?
A. Generally commercial life you might call it, get everything I could, do everybody I could, any work.
Q. Have you ever navigated boats any?
1045 A. Yes. That is, I have worked on boats, yes, sir.
Q. To what extent?
A. In almost every capacity there is aboard a boat. I wheeled and fired and also ran the engine.
Q. Have you ever run boats on the St. Louis River?
A. Yes, sir.
Q. To what extent?
A. Well, by that question, how long, do you mean?
Q. Well, yes.
A. Oh, several years.
Q. When?
A. Well, now, the first experience was in the latter part of the '70's. Now I will give you instances and you can get your dates probably better from that. My recollection of dates is very poor. It was the year of the Hayes and Tilden election, the first year.
Q. That was '76?
A. June 12th.
Q. It was the year of the Hayes and Tilden presidential campaign?
A. Yes, sir.
Q. What were you doing?
A. I was working for a man by the name of Marty Wheeler up and down the St. Louis River towing scows of rock, delivering them down here at the Superior entry.
Q. What boat were you on?
A. The tug Amethyst.
Q. Now had you been on the St. Louis River prior to that time, before that time?
A. Yes, in small boats, at one time I went up on the Mary Ann.
Q. When was that?
A. That was a year or so prior to the time I speak of. There was a payment. We went up there to get our annuities. The Indians went up to Fond du Lac to get their annuities.
Q. That is, the Indians were paid up there at Fond du Lac?
1046 A. Yes, sir.
Q. And you went up there to get your pay, did you?
A. Yes, sir, and we went up on the Schooner Mary Ann.

Q. That was prior to the Hayes and Tilden campaign?
A. Yes, sir.
Q. Had you ever gone up the St. Louis before that?
A. Not outside of small boats.
Q. What do you mean by small boats?
A. Canoes or row boats, what you might call them.
Q. Were you familiar with the St. Louis River above Grassy Point prior to that?
A. Not at that time that I am speaking of.
Q. When did you first become familiar with St. Louis River above Grassy Point?
A. The time I went to work with Mr. Wheeler.
Q. But you say you had been up there with row boats prior to that time?
A. Yes, sir.
Q. What took you up there before that?
A. Why, I had an uncle living at Bear Island so-called, now I presume Smith's place, up there. I believe if I recollect right Mr. J. D. Howard became the owner of that place afterward.
Q. Where is it with reference to Big Island or Clough Island?
A. Oh, that is away up above Clough Island, away up above.
Q. And you went up there frequently, did you, in row boats?
A. Well, yes, we went up two or three times a season. My uncle lived up there and we went to visit him.

By the Commissioner:

Q. Clough Island is what is now called Big Island?
A. Well, Judge, I couldn't answer that because things is
1047 changed now, what they call things now they called different. Clough Island is all I knew; Huguet Island is the name before the Clough people got hold of it.
Q. But it was the Big Island?
A. Yes, sir.

By Mr. Gard:

Q. You knew it as Huguet Island?
A. Yes, sir.
Q. Then you ran on the tug up there in the year of the Hayes and Tilden campaign?
A. Yes, sir.
Q. Did you do any other running up the St. Louis River on boats after that?
A. Yes, sir.
Q. What?
A. Well, there was a boat by the name of George S. Frost, a side-wheeler. I went up on her.
Q. How often?
A. As often as my earnings would allow, went up there to an

excursion usually, she used to run an excursion. Probably I went up in a season two or three times.

Q. How many seasons?

A. One season.

Q. How long were you on this tug you mentioned that you ran up there?

A. Well, I went to work in July and stayed with them all that fall, that is, closing that season.

Q. How often did you make trips up the St. Louis?

A. As fast as we could make them.

Q. What were you doing?

A. Hauling rocks for the harbor.

Q. From what place?

A. Up there to Fond du Lac at a place over to the stone quarry around to Fond du Lac, on the west side.

Q. To the natural entry out here?

A. Yes, sir.

Q. How many trips would you make a week?

1048 A. Sometimes we would make two or three. We would run night and day and make them as fast as the scows would be unloaded.

Q. You towed a scow, did you?

A. We towed scows, yes, sir.

Q. How much water did your boat draw?

A. The Amethyst? Why, now, I hardly remember, Mr. Gard.

Q. You don't remember?

A. I don't remember, but I do remember this we had to go around what we called the main thoroughfare, the main channel.

Q. Well, what other boat did you run or have you run on, on the St. Louis River to Fond du Lac besides what you mention?

A. F. L. Danforth.

Q. When?

A. Along in the '80's, when A. M. Miller's logs floated through from Midway and they came down the St. Louis and I was working for Peyton and Kimball at the time and Mr. Miller asked for help of the men that Mr. Peyton could spare and I was sent up with a crew and the Nellie Cotton went up. We stretched some booms and caught what logs we could. The Cotton was busy and they sent up the F. L. Danforth. A man by the name of Sullivan was sailing her then.

Q. That was in the '80's, you say?

A. That was in the '80's, yes, sir.

Q. How long were you on the St. Louis River that year in a boat?

A. The whole season.

Q. What were you doing?

A. Picking up logs and going along with the tugs as they would tow the logs down the stream, place them down here where they were to be sawed up.

1049 Q. Now, have you been on any other boat up the St. Louis River?

A. Yes, sir.
Q. What?
A. The Rambler.
Q. When?
A. Well, it was along in that following summer picking up logs for Peyton and Kimball and towing them down to deliver them to the boom.
Q. Did you ever work for Peyton, Kimball & Barber?
A. I did.
Q. They had a sawmill on Connor's Point?
A. Yes, sir.
Q. How long did you work for them?
A. Well, I think it was about three or four, about four years.
Q. When was it, in the '80's or when?
A. In the closing of the '80's, that is, in the '80's that I worked.
Q. What did you do, what were your duties?
A. In the wintertime I used to go in the woods for them and in the summer I handled their logs with a tug, that is, they had a tug to go up river. Up here at the so-called school section they bought a tract of land there and cut logs and the boom broke up and we had them to pick up, quite a bunch of logs one season.
Q. What did you do on the tug?
A. Why, I wheeled, operated the boat up there several times when parties wasn't acquainted with the river.
Q. Now have you been up there on any other boat?
A. On an excursion, yes, sir.
Q. When?
After that.
Q. Well, have you been up on any other boat in the '80's?
A. I will say I did. Now I can't recall the name of the side-wheeler that used to run in the bay but it was an Ontonagon
1050 party that owned it and George G. Greenfield Sailed here. I can't call the name.
Q. How often did you go up on that boat?
A. Oh, I don't know. Several times in a season I went up on an excursion.
Q. Up to Fond du Lac?
A. Up to Fond du Lac, yes, sir.
Q. Now, do you recall any other boat that you went up on in the '80's or prior to that time?
A. I don't recollect.
Q. In the '90's did you go up on any boat?
A. No, sir.
Q. When you went up on these boats in the '70's what course did you take when you rounded Grassy Point?
A. I never remember taking any. You mean a compass course?
Q. Yes, what direction did you take, different directions?
A. We went northerly, west, in this direction.
Q. That is you are pointing northwest?

A. No, I am pointing as the channel went as we rounded Grassy Point.

Q. What was it called, the place where you ran boats there, was it the channel or not?

A. The channel. If it wasn't we couldn't have made that passage there.

Q. What was it called? Was it called the cut-off or the main channel?

A. Why, the main channel.

Q. The main channel?

A. Yes, sir.

Q. Was it deep water?

A. Yes, sir.

Q. How deep was the water in places?

A. Well, I couldn't say just exactly but it was—the Danforth and the Rambler both were eight or nine feet draught and we found no trouble but just this one spot of water where the current
1051 caught her bow and drifted her over to the starboard side.

Q. Where was that?

A. Just about the time we got into Milford channel.

Q. But you went over there right along, did you, with these boats?

A. Yes, sir.

Q. What do you mean by the Milford channel?

A. Why, up along toward the west there there was a kind of a channel went into the old Milford dock to the right.

Q. Was that from the main channel it went in?

A. Yes, sir.

Q. Do you know where the Zenith Furnace Company is now?

A. I do.

Q. Was it above or below that?

A. Just above the furnace dock, just above, as near as I could make it above the furnace dock. The land marks are all different now. I couldn't just exactly pick it out. At least that is my judgment.

Q. After you rounded Grassy Point did you keep close to the Minnesota shore or away from Minnesota shore?

A. Well, kept over at the right next to the shore, being the Minnesota shore I presume.

Q. The right hand?

A. Right hand.

Q. As you went up?

A. Yes, sir.

Q. Did you find a current in that channel there?

A. Yes, sir.

Q. Considerable current.

A. Quite a current. When the water was low certainly there wasn't much current. When the water was high, freshet, why, she was quite strong.

Q. Was there weeds at the side of the channel?

A. Yes, sir.

Q. Do you know whether the banks were well defined or not?

A. With weeds.

1052 Q. Yes, was it defined with weeds?

A. Yes, sir.

Q. And would you run the channel by the weeds?

A. As a rule we did. After you dropped into them why, you couldn't get out to the deep water because if you went off you would get into shoal water.

Q. Did you sometimes go what is called the cut-off?

A. Yes, I am familiar, that is, I know what it is.

Q. What kind of boats took that channel?

A. Well, my recollection is there was nothing but canoes and small boats. There was one spot there it was utterly impossible to go at the time I spoke of because of shoal water.

Q. Where was that?

A. The boys used to call it the corduroy.

Q. Where was that corduroy?

A. Well, just as you went up the flats and just about the time you made the first swing to get into the channel off the narrows, off the cut-off channel as they call it.

Q. What do you call the flats?

A. Why, the upper part of the bay where it is flattened out there with weeds and water products.

Q. Was that below Big Island?

A. Yes, sir.

Q. Was that called the flats?

A. Why so-called. I would call it the flats.

Q. Was that between Big Island and Grassy Point?

A. Yes, sir.

Q. Outside of what you would term the main channel?

A. Westerly, west of the main channel, yes, sir.

Q. Did you tow logs down the main channel there?

A. Yes, sir.

Q. How did you keep in the channel?

A. We couldn't get out after we got in it.

Q. You say you couldn't get out after you got in it?

A. No.

1053 Q. Why?

A. Why, if you did you would get aground, and often we just pulled the slack of the tow line and let the current bring the logs down in the current so we wouldn't pull the logs up on the bank, just strain enough so she would follow the current as we came along down so we wouldn't pull our boom apart.

Q. Could you follow that channel by the current sometimes?

A. Yes, sir.

Q. When would that be, at what time would you follow the channel by the current?

A. Why, when the water was high.

Q. Well, when would that you usually mean, any particular time of the year?

A. Whenever we had a freshet, rain, heavy rain.

Q. Do the Carnegie Coal Dock and the Zenith Dock extend over part of that old channel or not?

A. It looks to me in my judgment it is across the old channel.

Q. You were up there a week ago last Monday, was it?

A. Yes, sir.

Q. Went up there to refresh your memory?

A. Yes, sir.

Q. Went up with some other people, did you?

A. Yes, I went up with Mr. Bardon and Mr. Powell and several Indians that was familiar with the old channel and some of the old settlers, pioneers at the head of the lakes.

Q. Have you done sounding up above Grassy Point?

A. I did.

Q. For whom?

A. For the government.

Q. With whom?

A. Mr. Silvey, W. B. Silvey, I believe was the name.

Q. Silvey?

A. Silvey, yes, sir. He was the field engineer and Gardner, I believe, was the chief engineer.

1054 Q. When was that, do you know?

A. No, I can't recall that year. I presume—no, I can't recall the year. I worked for J. H. Darling prior to that time before we sounded up here, and in the spring before the season opened down here we worked.

Q. That was above Grassy Point, you mean?

A. Yes, sir.

Q. What did you do with reference to sounding?

A. I handled the pole for sounding, I done all the sounding.

Q. Was there somebody along to take the records?

A. Yes, had a recorder. There was a man there that recorded every time we put the pole down. I read it to him and he put it down.

Q. You read it to him?

A. I read the pole, the depth of the water to him and he put it down in a book.

Q. But you used a pole all the time?

A. No, sir, we used a line sometimes where it was too deep. I had a 22-foot pole but there were spots along in different places where the 22-foot pole wouldn't reach bottom.

Q. Where would that be?

A. There was a little spot there just above where the Carnegie dock is now, about that, around at Indian Point so-called.

Q. Well, was it in the channel or not?

A. In the channel, yes, in the main channel as we come down the river the main river.

Q. And you found the deepest water in the channel, you say?

A. Yes, sir.

Q. Well, is that the channel you went in with your boats?

A. Yes, sir.

Q. Same channel that you went around there when you sounded?

1055 A. Yes, sir. My instructions are that every time I get into the heavy waterway is to mention it to the recorder so he could designate in his book where we would strike the channel.

Q. How would you designate it? What would you say to him?

A. I would say to him "here is the channel", I says, and he put the letter C opposite his figures and then we would keep on until we got to the shore and then go up a ways and then come back parallel to the other that we had sounded and also the same thing kept on that way until we struck——

Q. Well, now, did you find the banks at the side of this channel were sloping off gradually or abrupt?

A. In places it was very bold; in places again she would come out flat.

Q. How did you find it around above Grassy Point there, between Grassy Point and the Zenith Furnace Company, if you remember?

A. Why, the water there was quite an average depth up to the time that we got into these holes in the river.

Q. What do you mean "quite an average depth"?

A. Well, it was gradual bottom, It didn't run in pits same as it did on the main river.

Q. That is, you mean the channel as it extended longwise was uniform, is that what you mean?

A. Yes, in that flat it was wider there, it didn't run into a hole like it does generally in some rivers, as you know. This was more of a uniform bottom.

Q. How were the banks?

A. They were quite high.

Q. Quite high on either side?

A. Yes, sir.

Q. Of the channel?

A. Yes, sir.

Q. You say that was for W. B. Silvey?

A. Yes, sir.

1056 Q. That is the man who was drowned on the Titanic?

A. Yes, on the Titanic, yes, sir.

Q. Can you tell us about how long ago that was?

A. I could by referring to the government office because J. H. Darling come that season and I started to work for J. H. Darling the first season he came here to take charge of the office. He done the field work himself down at this lower bay here, and I work for him.

Q. And how long after that was it that you worked for Silvery?

A. The following winter.

Q. Now during the time that you were familiar with the St. Louis River in the '70's and '80's did you know or were you familiar with the course that boats usually took up above Grassy Point?

A. Well, what do you refer to by course, compass course or bearings, Judge?

Q. No, I mean the channel, what channel they took.
A. Well, the main channel. We went by sights over the after end of the boat, we put it on certain land marks.
Q. No, I mean do you know where boats ran up there generally, that is did you see other boats navigating up there, other than the boats you were on?
A. Yes, sir.
Q. Well, did you know where boats generally ran?
A. Yes, sir, at that time.
Q. That is in the '70's?
A. Yes, sir.
Q. And the '80's?
A. Yes, sir.
Q. Well, now, where did they run, in this channel or out
1057 of it?
A. In this channel.
Q. That you have spoken of as the main channel?
A. Yes, sir.
Q. Did you frequently see other boats in that channel?
A. Yes, at that time I speak of there was no other way of going there, never would attempt to go otherwise than this main channel. They go there different now after the improvement.

By the Commissioner:

Q. Did you ever see them go around the cut-off?
A. Why, small boats, I never heard of other boats. The Amethyst attempted to go through there once with a scow and we got hung up.
Q. Do you know where the cut-off is?
A. Yes, sir.

By Mr. Gard:

Q. Have you frequently been up the St. Louis River in the spring?
A. Yes, sir.
Q. In the early days were you frequently up there?
A. Sometimes we were up there pretty early in the spring, one spring in particular. There was one winter we called the open winter, St. Louis Bay was open early, on Sunday the 17th of March, we had a little shack up here, we called it a camp and I was at the camp that Sunday and there come up a storm and wind and blew the logs up the river, we hadn't them secure, and the storm came up early and blew all our logs away. That was early in the spring, in March, and we had to pick up them logs and of course that took me up around the islands and around in that open marshy country there pretty early in the spring.
Q. Were you frequently up there early in the spring?
A. Not often as the seasons went, no.
1058 Q. But you were up there sometimes early in the spring?
A. Oh, yes.

Q. Do you know where the ice first melted or first went out up above Grassy Point?

A. There in the channel where the currents are strongest.

Q. You have seen that, have you, in the spring?

A. Yes, the first place of opening was always up there near Spirit Lake. We used to make sugar up there back up on the hillside there and we used to have to fish in order to get along and that was open quite early in the spring, that is the current would——

Q. When you say this channel would open first do you mean this main channel that you have described?

A. Yes, sir.

Q. The one above Grassy Point, the one that hugs the shore there?

A. Yes, sir.

Q. Have you seen that channel open when the rest of that flat there that you speak of had ice on it unbroken?

A. Yes, in the middle grounds, I did.

Q. Mr. Ojibway, will you step to the table here and examine Wisconsin Exhibit 1. Now, I will ask you to look at this so you understand it. Do you see where Grassy Point is located and the Island? That is the island that you call Huguet?

A. Yes, sir.

Q. Do you see where Spirit Lake is located?

A. Yes, sir.

Q. And Spirit Island?

A. Yes, sir.

Q. Do you observe an island about opposite the Zenith Furnace Company?

A. Yes, sir.

1059 Q. You knew that island, did you?

A. Yes. Of course it is bigger now than it was at that time.

Q. Now, starting from Grassy Point or where you round Grassy Point will you indicate where the main channel is that you traversed as you went up the river? Just indicate going from St. Louis Bay around Grassy Point there. The St. Paul & Duluth bridge is across Grassy Point there, isn't it?

A. Yes, sir.

Q. Now after you round Grassy Point.

A. The red marks follows it as near as I can give it.

Q. That is the red line with an H marked on it, is it?

A. Yes, sir, continue on up.

Q. How long did you work for Peyton, Kimball & Barber?

A. Three or four years or better. I think it was a little more than that, probably nearly five years.

Q. And were they operating a tug all the time?

A. Most of the time.

Q. And were they operating it up the St. Louis River a good part of the time?

A. As business called, yes. They were towing logs. They were in that line of business.

(Court here adjourned until two o'clock P. M.)

1060 WEDNESDAY, August, 15, 1917—2 p. m.

JOHN OJIBWAY.

Cross-examination.

By Mr. Bailey:

Q. You say that the first that you had to do with the St. Louis River was one time when you went up there to get a bounty from the Government?

A. I didn't catch that last.

Q. I say, the first that you had to do or remember about the St. Louis River was one time when you went up there to get bounty from the Government?

A. Yes, sir, annuity.

Q. That is because of your Indian blood?

A. Yes, sir.

Q. What are you doing now; what business are you in now?

A. I am guard in a lumber yard for the Northern Lumber Company.

Q. Have been four years?

A. No, sir.

Q. You have been at Cloquet four years?

A. Yes, sir.

Q. How long have you been guarding?

A. A week ago last Tuesday I started.

Q. What were you doing before that?

A. Working for the Government.

Q. What doing?

A. They call me assistant farmer in the Government service.

Q. On the reservation up there?

A. Yes, sir, under George W. Cross.

Q. Is that what you were doing the four years you have been there in Cloquet?

A. Yes, sir.

Q. And what did you do just before you took that job?

A. Night watching for the P. & R. Coal & Iron Company.

1061 Q. And what other employment have you had up there at Cloquet?

A. Nothing more than when I went up there, worked with the agent, with the agency.

Q. What were you doing just before you went to Cloquet the last time?

A. Why, I have been at Cloquet four years; up there for the Government a week ago yesterday; today is Wednesday.

Q. What I mean, before you went there four years ago?

A. I answered that, P. & R. Coal & Iron Company.
Q. Oh, down here in Duluth?
A. No; Superior.
Q. You never held a pilot's license, did you?
A. No, sir.
Q. You never were a master?
A. No, sir.
Q. You never ran these commercial boats yourself, did you?
A. No, sir.
Q. And the only knowledge that you gained was through working on them as a tug hand?
A. Wheelsman, and times that I went up there with masters of the boat that didn't know the way, I would help them along.
Q. Now, where was it that you were running the Danforth or where did it go when you were on it?
A. Up the river.
Q. Where? Up to Grassy Point?
A. Up the St. Louis River.
Q. Up to Fond du Lac?
A. Up to Spirit Lake.
Q. And about when was that, if you remember?
A. That was along in the '80's; I can't recall just the date, the year.
Q. You testified on direct that you weren't very good on dates?
A. I did. I ain't on that.
Q. You don't undertake to locate the year?
A. No, I don't.
1062 Q. Nor do you attempt to locate the date when you went up on the Rambler?
A. No. It was a season or two forward of that.
Q. You don't know whether there had been any dredging done there at the time you went up on those particular boats or not?
A. No, sir.
Q. You say you don't know?
A. There wasn't any dredging. You asked if there was any dredging done. I said there wasn't.
Q. You think there wasn't?
A. I know there wasn't.
Q. You say that this channel that you speak of was pretty well defined, the banks, by reason of the weeds. That is the only way that you know the banks were very well defined, wasn't it, was because the weeds would come up on there on either side of it?
A. Yes, sir.
Q. And there was quite a number of channels all over that particular bay there where the weeds didn't grow, were there not?
A. No, sir, there wasn't.
Q. Well, passageways, then?
A. Sir?
Q. Quite a number of passageways where the weeds didn't grow?
A. Not to my recollection.
Q. Well, you always went in this one particular course?

A. Yes, sir.
Q. So you don't know about the other courses, do you?
A. No, sir.
Q. What?
A. Sir.

Q. I say, so you didn't know about the rest of the upper
1063 bay, did you?

A. I knew that the boats we were towing logs with couldn't go in these——

Q. I am asking you where the weeds were and bull-rushes. I say you didn't go except in this one course, did you?
A. In large boats I didn't.
Q. Well, isn't it true that there were number of other courses up there that the rushes didn't grow up in?
A. Not to my recollection.
Q. They didn't grow between south of Big Island and the Wisconsin shore, did they?
A. It was full of bull-rushes. This was the rushes.
Q. I was asking you now between Big Island and the Wisconsin shore, that cut-off as you call it?
A. Yes.
Q. Rushes didn't grow in there, did they?
A. Not away up there, no.
Q. And they didn't grow to speak of in the course that was usually taken in getting up there, did they?
A. No.
Q. And there were other channels around through there where they didn't grow, weren't there?
A. Small boat channels.
Q. I didn't ask you whether they were small boats. Isn't it true that there were a lot of channels around there where the rushes did not grow up above the water?
A. There was one passageway there.
Q. And there was one there close to the Wisconsin shore, wasn't there?
A. There was, yes.

Q. And then there was this one that you call the cut-off?
1064 You said yes, didn't you, nodded your head?

A. I want to understand this man before I— You are speaking about the south side of the passageway? What part of the country are you talking about now?

Q. I am speaking now about the channel or course that you took up the cut-off. I think that was my last question.
A. There was no rushes in that. Up in the narrows there wasn't.
Q. And there were none on that course as you left Grassy Point and went up towards this Snowshoe Island, were there?
A. I don't know where Snowshoe Island is.
Q. Do you know an island called Pancake Island?
A. I don't.
Q. Do you know an island called Pie Island?

A. There was an island coming out into Pokegama there a little pinnacle island, called Pie Island.

Q. That is away down in Pokegama Bay or right at the end of Pokegama Bay, the one that you were speaking of?

A. I think so.

Q. You never knew of any island over about opposite where the Zenith Furnace Company dock is, did you?

A. There was a number of bogs.

Q. Will you just answer this: Did you know of any island over there about opposite the Zenith Furnace Company dock?

A. Yes, sir.

Q. What is that island?

A. Well, I don't know what they called it. It was an island or a bog.

Q. Now, I will ask you whether there were any rushes growing in the course that you took from the end of Grassy Point up towards that island?

A. Yes, sir; on the left-hand side there was an island.

1065 Q. Of course, on the left-hand side of the course, but I am asking you whether in the course that the boats took up there there were any rushes grew?

A. Not in the route, no.

Q. And there weren't any in the route that they took when they went just north of the island, were there, over into what you call the main channel?

A. No, sir.

Q. So there were at least four routes that you describe where there weren't any rushes there, isn't that right?

A. No, sir.

Q. Now you speak of that part of those waters right near this marsh island that you have last talked about. Either side of it you call those flats, don't you?

A. Yes, sir.

Q. Flats clear across from the Wisconsin to the Minnesota shore?

A. Clean to the channel.

Q. There was shallow water over on the Minnesota side right in what you call the channel, wasn't there? Right at that point?

A. Yes, sir.

Q. So that there was a flat clear across from the Wisconsin to the Minnesota shore?

A. Channel.

Q. Why do you say channel when you just admit that there was a shoal place there?

A. You don't understand me.

Q. I understand you all right enough. There was a shallow place clear across there, wasn't there, on the Wisconsin to the Minnesota shore?

A. Yes, sir.

Q. And you called that flats?

A. I do.

Q. And the character of those flats was just about the same
1066 as in this lower bay, about the center of the bay, across from the Wisconsin to the Minnesota shore, wasn't it?

A. Yes, sir.

Q. Just about the same; more or less stagnant water?

A. Yes, sir.

Q. Now this channel that you have spoken of that you have designated the main channel, that was pretty crooked, wasn't it; that had a good many turns in it?

A. Well, yes; they had one swing.

Q. It had a lot of swings, didn't it? It had a swing at Grassy Point and then a swing after you went north and west a ways; then you swung to the west?

A. Yes, sir.

Q. Then you swung to the south?

A. Varied a little westerly there.

Q. Then you swung up northwest again?

A. No, sir; went westerly there and swung southerly.

Q. Then where did you swing?

A. Southerly.

Q. Then where?

A. Southerly.

Q. Then where?

A. Then continued easterly; then you were getting away around over Spirit Lake.

Q. So that there were quite a lot of swings, weren't there?

A. Just one swing, continuance of swings.

Q. One big swing and a lot of little swings inside of it?

A. No, sir.

Q. That course you pointed out there on the map certainly showed it.

A. Well, that's true, but it swings that way, if I understand the English language right.

1067 Q. I am talking about the little swing. There were a lot of turns that you had to make there, weren't there?

A. Yes, sir.

Q. And turns that it would be pretty hard for the boats such as they have nowadays, five or six hundred feet long, to make, wouldn't it?

A. Rather, yes.

Q. And then the Government dredged out what is now the main channel they put it in just about the only place that it was practicable to put it, didn't they?

A. I don't know, I am sure.

Q. They made it straight, didn't they?

A. I expect they did.

Q. That is, pretty near straight from Grassy Point up to the head of Big Island; that's right, isn't it?

A. I believe they did, yes.

Q. And that was the natural course for boats to take in getting

from Grassy Point up to the head of Big Island if there was water enough, wasn't it?

A. Depend on where you was going; going up on the flats you would go straight ahead, and if you were going to follow the channel you certainly——

Q. I say, that was the natural course, if there was water enough? I mean, if there was depth enough to go right from Grassy Point up to the head of Big Island?

A. I don't know, I am sure.

Q. That is the course you would take, isn't it, if there was water enough?

A. I don't know, I am sure. Depend on when I got there to see where I was at, as a sailor would do.

Q. You would take the shorter course as long as there was water enough, wouldn't you, as a sailor?

A. Expect to, yes.

Q. You spoke about one St. Patrick's Day when you said
1068 there was a lot of logs that you had there that blew up the river?

A. Yes, sir.

Q. How far up these waters did they go?

A. They just floated right along up this shore. Some of them went down the east side of Grassy Point and went up the opening and went up beyond, over across the flats there.

Q. That is, they came from what is known as the lower bay and went by Grassy Point and then went up on the Wisconsin side?

A. Went straight ahead or westerly, yes; just right straight as the wind drove them up in there.

Q. How far did they go up to that cut-off——

A. Up against the Big Island. There was just bogs here and there. There was no great series of land to prevent it, but just a slough in there.

Q. Just a slough water. So they must have gone up several miles there, didn't they?

A. Yes, right up to the head of that.

Q. I say, several miles; two or three miles?

A. Yes.

Q. Quite a large quantity, were there?

A. Yes, sir, big raft; winter's logging, the winter's work there.

Q. Now the ice usually breaks up in most any bay or river next to the shore, doesn't it, first?

A. On the sunny sides; on the sunny side, yes.

Q. I say, next to the shore where the earth commences to heat out, heat it?

A. Yes, sir.

Q. And therefore warms the water next to it?

A. Yes, sir.

Q. That is generally true of any water, isn't it?

A. Yes, sir.

1069 Q. Now, up there near Big Island, or above Big Island, the river has a comparatively narrow channel, doesn't it?

A. Yes, sir.

Q. And the banks are well defined above the water?

A. Yes, sir.

Q. About how wide is it just as you pass Big Island and get in to these banks?

A. Which end of Big Island.

Q. I say, as the river passed around, so to speak, Spirit Lake, there is a channel there where this cut-off from Spirit Lake—about how wide is it along there?

A. I should judge two hundred and fifty feet more or less.

Q. Then when it gets down to Big Island it widens out so that across just below Big Island, that is, this side easterly, it is from a mile to two miles wide there, isn't it?

A. I guess it is.

Q. And there is quite a deposit or set of shoals just as the river gets by the northwesterly end of Big Island, isn't there?

A. Shoals?

Q. Yes.

A. Marshy on the right-hand side, yes.

Q. Well, a lot of stuff has been deposited in those waters?

A. Yes, sir.

Q. So that the water is comparatively shallow?

A. Yes, sir.

Q. And that is true to a greater or less extent all over that upper bay, isn't it?

A. Yes, sir.

Q. Sometimes pretty difficult to follow this channel that you have spoken of, wasn't it?

A. No, not necessarily.

Q. Did you ever come down in the night?

A. Yes, sir.

1070 Q. Had no trouble?

A. Well, we would sneak along down, get down.

Q. Those places where there weren't any bull-rushes from the southerly end of Grassy Point, in almost a direct line to this little island, there was a much wider place there where there were no bull-rushes or weeds, than there was in this channel that you have spoken of that you went around right near Grassy Point?

A. Yes, sir, broader there a little.

Q. Two or three times as broad where there were no bull-rushes?

A. Yes, sir.

Q. And this one that you have spoken of that you say you usually followed, how wide was that right there at the southerly end of Grassy Point?

A. Oh, the deep water probably was possibly about 150 feet.

Q. Now you spoke about helping take soundings out there?

A. Yes, sir.

Q. The way you did that, the boat that you were in, if you were in a boat, would move from the Wisconsin shore to the Minnesota shore in something of a direct line, wouldn't it?

A. It was in the winter time.

Q. Well, you said you did that partly on the ice and partly on the boat, didn't you?
A. No, sir.
Q. All on the ice?
A. Yes, sir.
Q. And you said that when you struck a channel you called it channel, and you understand that the man that you were working with put down a C and marked the channel whenever you called a C?
1071 A. Yes, sir. He was instructed and I was instructed to call out to him and such would be the case at all times.
Q. That is, you would call out the channel?
A. Yes, sir.
Q. And he would put it down on his map?
A. In his book.
Q. And then make the map from that; then make his map from that, is the way you understand it?
A. Sir?
Q. And then make his map from the C that you called out?
A. I wasn't at hand when they made the map. I know about the field.
Q. Do you know Alfred Merritt and Lon Merritt, I suppose?
A. Yes, sir.
Q. And the two Howards, John and Ben?
A. Yes, sir.
Q. And Captain Stevens?
A. Yes, sir.
Q. And Captain McDougall?
A. Which McDougall?
Q. The one that built the whalebacks?
A. I do.
Q. And Mr. Brewer of the Duncan-Brewer Lumber Company?
A. Yes, sir.
Q. And Mr. Krause?
A. I don't recollect that I do.
Q. Lives up there at Fond du Lac?
A. Yes, sir.
Q. And Mr. McManus, Charles McManus?
A. I do.
Q. They were all navigators up there in the early day, weren't they?
A. I presume they were.
Q. They actually ran boats up there?
A. I don't know that.
Q. And yet you claim you have been all over these waters in those days and didn't know that?
A. I have been up in those waters, yes, sir.
1072 Q. And you didn't know they ran boats up there?
A. Not to my recollection.
Q. Who ran boats there that you knew?

A. Fellow by the name of Harris and Ed. Smith, Walter Burns and Martin Wheeler and Jack Jeffry.

Q. Those are the only ones you know?

A. When I was there.

Q. Now you were working for Martin Wheeler, weren't you?

A. Yes, sir.

Q. How long did you work for him?

A. Part of two summers. One summer first summer I went to work for him, along the middle of the summer; worked all summer, and I pretty near finished the season with him. As he got through the contract he was through.

Q. He was running the boat that you were working on?

A. Yes, sir.

Q. And he had to do with the navigation; he guided the boat and picked out the channels?

A. Yes, sir.

Q. And of course the channel that you took was the channel that he picked out?

A. It is the old channel.

Q. I say, the channel that you took is the channel that he went on?

A. Yes, sir.

Q. And that is what you have been attempting to describe here, is the channel that he took, is it?

A. Yes, sir. I have described.

Q. Do you know where Harris is?

A. No, I don't know. The man may be dead for all I know.

Q. Do you know where any of these other people are that you have spoken of?

1073

A. Mart Wheeler.

Q. Well, outside of him?

A. The last I seen of Mr. Jeffry, Jack Jeffry, he was in Duluth.

Q. Well, outside of him; these other people, do you know where they are?

A. Well, I don't, except Jack Shea.

Q. He was on the stand here the other day?

A. I presume he was. I wasn't here.

Q. Were you with this party that went up the river last Monday?

A. Yes, sir.

Q. Were there about thirty-two of you on the boat?

A. There was quite a number of us; I don't know how many.

Q. You had a good time, did you?

A. Why, sure; that's what we went for.

Q. And some disagreement amongst you as to where you used to travel up there?

A. Sir?

Q. I say, you had some disagreement amongst you as to where you used to travel up there, or did you all travel in the same place?

A. No. I didn't hear of any disagreement whatever, no, sir; only when we were going along up we ran up against a dock in the old

channel. We couldn't go any further so we sheered to the right—or sheered to the left.

Q. Something that——

A. Obstructed our passageway there.

Q. Just step down here a minute, will you. Calling your attention to Minnesota's Exhibit 1. You see where Grassy Point is here, don't you, on this exhibit?

A. Yes, sir.

Q. Did you ever go up on the channel that is marked
1074 A-G-B-C when you were going up to Fond du Lac?

A. No, sir.

Q. You didn't go on that?

A. No, not on that route.

Q. Don't know whether there was a route there or not?

A. Not in my time.

Q. I say, you don't know whether there was or not?

A. I don't.

Q. Calling your attention to the red line marked A-E-F-D, did you ever go over that route, or substantially that?

A. Yes, sir.

Q. You have been over that route?

A. Yes, sir.

Q. Was there a pretty good route through there?

A. There was at that time.

Q. What time do you refer to?

A. In the '80's.

Q. Did you very often go over that route?

A. I did at that time.

Q. Was that the route that you usually took in making what you call the cut-off?

A. No, sir.

Q. What were you doing when you took that route?

A. Go up and down the main channel.

Q. Is that where you claim the main channel was?

A. I expect it was, unless I am lost on that map.

Q. Well, get yourself located. Here is Grassy Point. Here is the island up here.

A. All the route that I ever was up on is the main channel.

Q. You see where the Big Island is, don't you, here on this map? Here is Grassy Point here (indicating). Now is this A-E-F-D that line up there the one you mean to say that you took as the main channel?

A. Well, if that is marked on that main channel, that is
1075 the route I took. I never took only one route going up there, and if that would be it, I went on that route; and if it ain't, I didn't go on that route.

Q. You can't tell, then, from this Minnesota's Exhibit 1, whether that is the route you took or not, as being the main channel that you have described?

A. No, not on that map.

By Mr. Fryberger:

Q. If they would show you a map, the one you saw before, and showed you a red line, you could tell that was the channel, couldn't you; the one that Mr. Gard would show you, you could tell where the channel was on that map, couldn't you?

A. I could by studying that up. I could do that if I took time enough.

Q. Mr. Gard showed you a map before luncheon, with a red line on it, didn't he?

A. Yes, sir.

Q. You said that red line showed the channel you took, didn't you?

A. Yes, sir.

By the Commissioner:

Q. When you were making those soundings there with Silvey you went across the river or the flat, did you?

A. Yes, sir.

Q. How far apart did you make the next line of soundings?

A. They were fifty feet apart on the shoal places and twenty feet in the deep places.

Q. How far were the lines apart?

A. Fifty feet apart.

Q. And you dropped your pole down every how long?

A. Well, in shoal places, fifty feet, and twenty in the deep places.

1076 Redirect examination.

By Mr. Gard:

Q. Now, Mr. Ojibway, I want you to come and look at this map and see if you can locate yourself on Minnesota's Exhibit 1, and I want you to come on this side of it (indicating).

Mr. Bailey: Is there any special significance in designating the side he was on?

Mr. Gard: Yes, sir, because he had the map bottomside up from the way I was asking him before; he was on the other side.

Mr. Fryberger: I want an exception to that statement on the ground that it is not a fact. It shows that he was on the right side of the map and he was looking up—the reading was up so he could see it.

The Commissioner: The witness may examine the map.

Mr. Bailey: I think it should appear that when I was examining him he was standing at the lower side of the map where he would naturally stand to read the print at the upper left-hand corner.

By Mr. Gard:

Q. Did you see Grassy Point?

A. Yes, sir.

Q. Did you see Pokegama Bay up there?

A. Yes, sir.
Q. Do you see the bay that is marked Little Pokegama Bay, that is ordinarily called Kimball Bay there?
A. Yes, sir.
Q. Do you see Big Island up there?
A. Yes, sir.
Q. Do you know that Millford was located over on the Minnesota shore?
A. Yes, sir.
Q. Do you know where the Zenith Furnace Company's
1077 dock is; can you locate it?
A. I think it's about there somewhere.
Q. Witness is pointing to a place northeasterly of the letter C on this map.
Mr. Fryberger: Same place you did, Mr. Gard.
Mr. Gard: I pointed right. I didn't mislead him.
Q. Now then, Mr. Ojibway, I will ask you to look at this map again carefully now and see if you can locate yourself on this map so that you can trace the channel that you traveled?
A. That is the route I think.
Q. Now go over that again?
A. That is the route.
Q. Now then, you have indicated the channel marked H on this map, haven't you?
A. Yes, sir.
Q. Were you bewildered when you looked at the map before and said this other mark——
A. I was. That is the reason I wouldn't give him an answer direct.
Q. Is there any doubt now in your mind that that channel H on this Minnesota's Exhibit 1 is the route that you took above Grassy Point?
A. Yes, sir.
Q. I say, is there any doubt about it?
A. No, sir.
Q. Now, I am not sure that I understand what you mean by the word "flats" up above Grassy Point. What is that you refer to as the "flats"?
A. Why, it was the open spot there westerly of the channel.
Q. That is between the channel and what shore?
A. And the still—going westerly there to Big Island, you might say you go up that broad cast clean to the island. Flats, as
1078 it is in water, boggy, swampy.
Q. Between the channel and what?
A. And up to the island as it was in my time, not now.
Q. Between the channel and the Minnesota shore do you mean, or the Wisconsin?
A. Up westerly, meaning beyond the Grassy Point channel northerly there, bending out westerly as they would, I call flats, shoals.
Q. Do you know where Kimball Bay is?

A. I wasn't told by name, because that wasn't the name they called it in my time.

Q. What was it called?

A. Little Pokegama.

Q. Same as it is on this map here then?

A. Well, I didn't notice that.

Q. There is a river up the stream further that is called Little Pokegama sometimes, isn't there?

A. There is such a place up there named Little Pokegama and Big Pokegama.

Q. Where is Captain Martin Wheeler, do you know?

A. I couldn't say. The last I knew, he was west, out in Washington or out on the Pacific Coast somewhere; I couldn't say just where.

Q. You spoke of where the ice goes out first. Does the current have anything to do with cutting the ice out in the spring?

A. It has, to my experience.

Recross-examination.

By Mr. Fryberger:

Q. Martin Wheeler was the man for whom you worked at the time you hauled these stone down the river?

A. Yes, sir.

Q. And he ran the boat?

A. Yes, sir.

1079 Q. Now, how many times did Mr. Gard show you this map with the red line on it before you came into court here; that is, before you went on the witness-stand?

A. I don't know as Mr. Gard ever showed me the map.

Q. Did you ever look at a map?

A. I did.

Q. Who showed it to you?

A. I saw it on the boat when we was bound up river.

Q. Didn't you see it after you came into the court-room here?

A. In the court-room I haven't.

Q. Who had the map going up the river?

A. Mr. Powell, if I recollect right.

By Mr. Bailey:

Q. How long did you go to school to Jim Bardon?

A. One term.

Q. And you have been pretty well acquainted with him since?

A. Been like a brother to me. He is a man that has done a great deal for me.

Q. And you feel under a great obligation to him?

A. I don't in a matter of business; a man I ask him a favor he always does it for me.

Q. Referring to Minnesota's Exhibit 1, and standing on the same side of this exhibit that counsel said you should stand on, will you

tell me what course you took when you went southerly of Big Island from Grassy Point?

A. From Grassy Point?

Q. Just tell us what course you took? There is the island there.

A. What course; do you mean by compass?

Q. I said southerly of Big Island, what course you took, what route you took, what direction you took, from Grassy Point, when you went the cut-off to Big Island. 1080

A. We went westerly or went northerly there (indicating).

Q. Just indicate on this exhibit about where you went?

A. (Witness indicates.)

Q. The course that you have just indicated is the same course that is the red line on Wisconsin's Exhibit 1? I think you will agree to that, won't you, gentlemen?

Mr. Gard: Yes.

Q. Now you say that that is the course that you took when you went through what you call the cut-off?

A. No, sir.

Q. That is what I am asking you. Tell me what course you took, and by "course" I mean direction or road or route, from Grassy Point when you went through the cut-off, and locate it on this map?

A. Without a boat or canoe?

Q. I am not talking on the ice. I am talking about when you went on the water.

Mr. Fryberger: Not a canoe; a boat.

The Witness: It's a small boat that I went with there, because I never went with a larger boat than a canoe in my time.

By Mr. Bailey:

Q. Tell us what course you took with the canoe then?

A. Just took the main river.

Q. Show us on this exhibit what you mean by the main river there?

A. This route up here

Q. Tell us how you went when you went on the cut-off, that is what I am asking you? 1081

A. Yes, sir.

Q. From Grassy Point to up beyond Big Island.

A. We went right up here in open rushes and go right through till we struck——

Q. Point it out here on the map with your pencil the same as you pointed out to counsel when he was asking.

A. Right up through there; right up through there.

Mr. Bailey: The witness designated the point commencing at point G and going almost directly across to the center of the curve of the red line E-F, at the southerly extremity of the curve, and then going westerly from there up to a point a little southerly of the point

D and then around the channel or to the so-called cut-off channel by Big Island. Is that a fair statement, gentlemen?

Mr. Gard: Substantially. I thought he brought himself up there instead of down there; but substantially.

By Mr. Fryberger:

Q. Now as I understand your testimony, you never at any time went over the short-cut with anything but a canoe or row boat?

A. Yes, sir, through the cut.

Q. That is through the short-cut south of the island?

A. No.

Q. Never went with anything except a row boat or a canoe?

A. Yes, sir.

Q. In all your experience?

A. In my experience, yes, sir.

Q. Then you don't know of your own knowledge how the boats went that took the short-cut, do you?

A. No, not in my time.

1082 J. A. CURO was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Mr. Curo?

A. At the present time, last year I am living at Frazee, Minnesota. Always made my home in West Duluth, 31 years.

Q. How long did you live in West Duluth?

A. Thirty-one years.

Q. In what part of West Duluth did you live?

A. I lived at what they call the corner of 63rd and Raleigh Street, 63rd Avenue West and Raleigh Street now; used to be called years ago Eighth Avenue West in Hunter's Grassy Point Addition to Duluth.

Q. Where is that with relation to Grassy Point?

A. Well, it's above the Grasey Point, original Grassy Point, the upper end.

Q. On the upper end of——

A. On the west end, southwest end.

Q. That is, is it near the base of Grassy Point, what might be termed the base?

A. Yes, it was within four blocks of the water.

Q. Was there much settlement around there when you went there?

A. Not any. I built about the first house in there.

Q. When did you become familiar with the waters of the St. Louis River above Grassy Point?

A. Well, about thirty years—I was on the river several times about 35 or 36 years ago, about '88 or '89.

Q. You became familiar with the river, then, in the '80's?

A. Yes, sir.

1083 Q. Above Grassy Point?

A. Yes, sir.

Q. Could you see the river from your house?

A. Yes, sir, I could. At that time up to four or five years afterwards; they built some houses between me and the bay, cut me off so I couldn't——

Q. Could you see the boats as they went up the river and came down the river?

A. Yes, sir, I could.

Q. Could you tell where they were going from your house?

A. I could tell whether they were going up or down, yes.

Q. Did you observe where the boats navigated in the '80's?

A. Yes, sir. They navigated on the west side of the flat and bay up there in the St. Louis River next to the Minnesota shore.

Q. That is, after they turned Grassy Point?

A. Yes, sir, after they turned Grassy Point.

Q. They went next to the Minnesota shore, you say?

A. Yes, sir.

Q. Was there a channel there?

A. There was the St. Louis River there.

Q. You called it the St. Louis River?

A. That's what we all called it in them days, St. Louis River?

Q. Do you know whether it was deep water?

A. It was the deepest water we had around there anywhere.

Q. How deep was it?

A. Well, it would run all the way from ten feet to thirty,—thirty-two; I don't think there was anything shallower than ten feet from Grassy Point up to within a mile of Fond du Lac.

Q. Have you run boats up the river yourself?

1084 A. I have in the last eighteen years, that is, small boats drawing five feet of water, launches.

Q. There has been a new channel dredged in the St. Louis River, hasn't there, above Grassy Point?

A. Been a new channel, you say?

Q. There has been a new channel dredged up there?

A. Yes, sir.

Q. Do you remember about when that was dredged?

A. I think it was in either 1892 or '93, I wouldn't say; '91, '92, or '93; that is along in that time.

Q. Do you — '91 or 1900?

A. Between '91 and 1900. It was about somewheres along about '92 or '93 when they dredged that channel. That would be somewheres along about 26 or '7 years ago.

Q. Now, are you sure that it was in '93?

A. I am pretty positive along about that time.

Q. Do you mean the dredging out the bars or——

A. No, I mean dredging out the new channel, channel that cut

the new channel out and filled the old channel in, and made the new channel.

Q. What boats did you run up above Grassy Point?

A. Well, the boats that I ran was my own boats, the Zenith, the launch Zenith; I ran her for four years, five years.

Q. What kind of a boat was that?

A. Thirty-foot launch, drew five feet of water when it was loaded. I ran a passenger boat.

Q. Where did you run that?

A. Sixty-third Avenue slip, up where that Hill mill was in there, right in that same slip. I ran that to the Duluth boat club mostly, branch that they put in, at about the head of Spirit Lake. Sometimes go to New Duluth, sometimes Fond du Lac, but I made
1085 regular trips, five trips, a day to the boat-culb.

Q. Could you see from your house whether the boats that went up the river there, up and down the river in the '80's, were taking that channel that you speak of that is quite deep, or not?

A. Well, if I could see them, if they wasn't I would see them standing on a sand-bar or mud flat. They had to be in that river or they couldn't go. That is, any boat that had any draft to it, anything over five or six or seven feet, they had to go in that river, St. Louis River. Grassy Point, they went right in where the Carnegie Coal-Dock is now. Carnegie Coal-Dock is about two-thirds across the river. The Zenith Furnace was going to build right out, and I believe when I was working for them there was a protest put in not to close that river because they had no way of getting up above there.

Q. When was that?

A. That was just before they dug the new channel, about a year and a half or two years before they dug that new channel.

Q. You worked for the Zenith?

A. I worked for them one year.

Q. What did you do?

A. I had charge of machinery there.

Q. Did you know of some boats taking the cut-off going up the river?

A. Never seen any til after Mitchell & McClure went to lumbering up the Big Pokegama; then they put on a little boat there and worked out in there through them muskeg swamps and willows and got towing logs down there and then they swept that all out there.

Q. When was that?

A. I think Mitchell and McClure built their mill in '94,
1086 1894, I think. They built their mill at West Duluth.

Q. Were you acquainted with the character of that, what Mr. Ojibway called their flats over there between the channel and the Wisconsin shore?

A. Well, yes, a good deal; it was mostly muskeg filled full of stumps and logs and driftwood and stuff that would come down the channel where the furnace was running; take a shoot out and go in the moss and grass and hung up there and fill up the——

Q. Do you know whether the Mitchell and McClure boats cleaned out the channel up through these flats there?

A. Well, they had a boat up there. That is, they put on a light boat there first and then afterwards they put a heavier boat on after they worked it out.

Q. Were you familiar with where the ice would melt and go out of the waters up there first in the spring?

A. Yes.

Q. Where would it go out first?

A. St. Louis River.

Q. By that you mean the channel, what has been designated as the main channel?

A. The navigated channel that come down by the Minnesota shore.

Q. The one that you have stated the Zenith dock now extends partly over and the Carnegie Coal Company extends partly over?

A. Yes, sir.

Q. That was the first place that the ice melted?

A. That is where the ice would go out first.

Q. Do you know of there being a current in the channel, or river, as you call it?

1087 A. Oh, yes, a good current, too. The new channel they built, dug the new channel through there and cut off the points of the river, straightened it; practically the new channel runs the farthest right away from the Minnesota shore at the Carnegie Coal-Dock, from the old river; that is the biggest cut-off they made on that new channel they made up there.

Q. Now when you first lived up there was about how long ago?

A. About 31 years ago I moved in there and built a house there in West Duluth.

Q. Was that usually called the St. Louis River through this place that you spoke of, this channel?

A. Always called it the St. Louis River; had no other name for it.

Q. Now I will show you Wisconsin's Exhibit 1 and will ask you to locate yourself on there and then show us what you mean by the St. Louis River above Grassy Point?

A. The St. Louis River I mean this here, right around——

Q. You have indicated the red line which is marked H?

A. Yes. There is Big Island and here is Tollis Island in here some place, and I can't see it very awful plain, but right in here some place, the mill in this bay in here where the river ran around; about there I think it is.

Q. What mill do you refer to?

A. I mean that mill they had in there years ago, saw-mill.

Q. You mean Millford?

A. Millford, just above the Zenith Furnace, on that same point of land; Marshall-Wells point. I think Marshall-Wells has an interest in a tar plant making tar paper on that same point

1088 where the mill was and the Zenith Furnace Company. That's what they called the Marshall-Wells point.

Cross-examination.

By Mr. Fryberger:

Q. Mr. Curo, you live at Frazee, do you?
A. Yes, sir, Frazee, Minnesota.
Q. How long have you lived there?
A. Little over a year.
Q. What are you doing there?
A. My folks are living on a farm. I am working in Duluth. I make my headquarters in Duluth. I only go up there once in a great while, once every thirty days or such a matter.
Q. What are you doing in Duluth?
A. Working for the N. P. Railroad Company, bridges and building department.
Q. Are you doing work with your hands, carpenter?
A. Yes, I have to work with my hands if I work.
Q. Well, I don't know; some fellows don't. You work as a carpenter—carpenter trade?
A. Yes, sir.
Q. How long have you been working for the N. P.?
A. About a year this last time.
Q. Are you a carpenter by trade?
A. Well, ship carpenter.
Q. Hoy long have you worked for the N. P. as carpenter?
A. One year this last time I worked for them.
Q. What were you doing before that?
A. Running a boat livery at West Duluth.
Q. What were you doing there?
1089 A. Well, rented out boats carrying passengers up and down the river.
Q. Did you own the livery?
A. I did, sir.
Q. What were they, gasoline launches?
A. Gasoline launches and row boats.
Q. Canoes?
A. Canoes.
Q. And you ran your boat livery about how long?
A. About 17 years.
Q. And that is the time in which you had experience on the St. Louis River?
A. That is where I had most of my experience. I was on the St. Louis River back and forwards before that.
Q. In running boats?
A. No; only go out with row boats or fishing; something like that.
Q. You never ran tugs up and down there and haul supplies, anything of that kind?
A. I ran a boat very near as big as some of the tugs.
Q. Yours was a gasoline launch?
A. Gasoline launch, drawed five feet of water.
Q. Drawed five feet of water?

A. Yes, sir.
Q. You used to get stuck with your boat, did you?
A. I have lots of times.
Q. You couldn't keep in the channel?
A. When I would get out of the river.
Q. You couldn't keep in the channel with a five-foot boat, eh?
A. I would keep in the channel, but you get out of the channel sometimes.
Q. You got out of the channel?
A. Yes.
1090 Q. The channel wasn't wide enough for your boat or what?
A. You take it when the weeds wasn't growed up on either side of the river, kept you guessing whether you followed the river or not.
Q. That would be all the way from Grassy Point up to Big Island?
A. Grassy Point up to Big Island; after you got to Big Island no trouble whatever.
Q. If the weeds weren't up it was quite a little trouble to follow the channel?
A. Yes, it was pretty crooked.
Q. You date your experiences on the river for the past 17 years?
A. Yes, the biggest experience I have had on there has been the past 17 years.
Q. Now just step down here and look at Minnesota's Exhibit 1. As I understand it you never saw any boats go up around the cut-off?
A. I never did till Mitchell and McClure went to dredging for lumbering up there.
Q. Did they ever go up around the cut-off any farther than Pokegama Bay?
A. What we called the cut-off is from just below the Zenith Furnace; there is a little cut-off there goes out into Pokegama Bay and around the Devil's Elbow, between that and the Carnegie Coal-Dock where they turn off.
Q. The turn-off is in what you call the main channel between the Zenith Furnace Company's dock and the Carnegie Coal-Dock?
A. That's what they worked out.
Q. Then that cut-off runs directly to the south of the Big Island?
A. Goes south of the Big Island. Well, it makes a little
1091 swing that way out towards the Minnesota side. When it leaves the channel it goes out like that and then goes in to where this cut-off on Devil's Elbow comes around and strikes the mouth of Big Pokegama; then there is deep water there.
Q. Then aside from this channel that you say took off the main channel between the Carnegie Coal-Dock and the Zenith Furnace Company dock and went to the south of Big Island, you knew of no channels at all in that excepting your main channel?
A. That is all I know.
Q. And then it was very small boats that you saw taking that cut-off?

A. The very small ones, yes, sir.

Q. That would draw four or five feet of water?

A. Well, four feet them days was about all. I hit the bottom going through there with my launch drawing five feet of water without there was an awfully heavy northeaster on.

Q. Now speaking of the flats, there was a solid sheet of water, was there not, before the rushes came up, from the Minnesota shore, we will take it now at the Zenith Furnace Company's Dock and Carnegie Coal-Dock, from the Minnesota shore clear across the flats to the Wisconsin shore, before the rushes came up?

A. Solid sheet of water?

Q. Yes.

A. No, sir, there was not. There was islands and bunches of willows and everything else, and roots and stumps and logs.

Q. There was water in there?

A. There was water in amongst it, yes.

1092 Q. But from the hill, looking down from the hill it looked like solid water before the rushes came up?

A. In spots looked like solid water.

Q. The width of the bay at that point is nearly two miles, is it not, from the Minnesota shore over to the Wisconsin shore?

A. Well, the widest place, I should judge, mile and a half or two miles; that is, running towards Billings Park.

Q. Now the channel that you claim you took to go up the river or bay from Grassy Point was nearer the Minnesota shore than the Wisconsin shore?

A. Right on the Minnesota shore.

Q. Right on the Minnesota shore?

A. Right handy to the shore. You could get spots it was right up to the bank.

By Mr. Bailey:

Q. All that you know about where the boats went from Grassy Point up until 1900 was just what you could see from where you lived there at West Duluth, was it?

A. That time when I was on the Zenith Coal Company's dock I was on the bay a good deal of the time back and forward; when I worked for the Zenith Furnace I was right on the dock pretty much all the time.

Q. When was it you worked for the Zenith Furnace?

A. I worked for them before this new channel was built through.

Q. As a matter of fact, the Zenith Furnace wasn't doing business there until after the new channel?

A. I worked for a man named Thompson from Milwaukee. They practically called it the Zenith Furnace Company, but it wasn't the Zenith Furnace Company that's in there now. This is the Minnesota now, practically as I understand it's the Min-

1093 nesota Steel Company owns it.

Q. You didn't travel up there towards Grassy Point much?

A. Well, not only with the row boats or something like that, before I went into business myself.

Q. And you would go most anywhere with the row boats until the rushes came up?

A. No; you would have to watch out with the row boat too.

Q. You could go most anywhere; you didn't have to follow any particular place through?

A. Lots of places you thought was an open space of water but you wouldn't go across that without you wade and pulled your boat over.

1094 VICTOR DESIMVAL was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Mr. Desimval?
A. I live in Menomonie, Wisconsin.
Q. How long have you lived in Menomonie?
A. Forty years.
Q. Did you ever live at Superior?
A. Yes, sir.
Q. When did you come to Superior?
A. I came to Superior in the year 1855.
Q. Where did you settle?
A. I settled nowhere; there was no houses in Superior yet.
Q. No houses here then?
A. I went in the woods and built a shanty and stayed there.
Q. How old are you, Mr. Desimval?
A. I am going on 85.
Q. Did you live at the Millford Mill over on the Minnesota side?
A. Yes, sir.
Q. When did you live there?
A. I lived there right after the Civil War from '62 on.
Q. From '62 on?
A. Yes.
Q. How long did you live in Superior after you came here in 1855?
A. I didn't live here very long.
Q. Where did you go?
A. I took a piece of land in Minnesota on the St. Louis River.
Q. Where?
A. Above the Grassy Point.
1095 Q. When did you take that land?
A. I took that land in '57, I guess it was; '56 or '57.
Q. Homesteaded it?
A. Yes, sir.

The Commissioner: You got a pre-emption, didn't you?
The Witness: Pre-emption, yes.

Q. Where was that located with reference to Grassy Point?
A. Let's see. The first was Freemont——
Q. Where was your pre-emption located?
A. About a mile and a half from Grassy Point up.
Q. Up from Grassy Point?
A. Up towards Fond du Lac.
Q. Do you remember the description of it?
A. The number of the section and so on?
Q. Yes.
A. No, I don't remember.
Q. When did you become familiar with the waters of the St. Louis River?
A. I started to run the saw-mill at Millford and was shipping my lumber down to Ontonagon; that's in Michigan.
Q. When?
A. That is in '62, '63, '64, and '5.
Q. Were you on the water of the St. Louis River in the '50's any?
A. In the '60's.
Q. Were you on it in the '50's any?
A. Yes, sir.
Q. What did you do in the '50's?
A. The first thing I done I worked in Oneota mill one winter and then the panic came on, I think it is the winter of '56 and '57, panic came on, couldn't get our pay, and we scattered. That is the winter, I guess, we quit.
Q. Did you have a boat on the water of the river above Grassy Point any in the '50's?
A. Yes, sir.
1096 Q. What kind of a boat?
A. Common small row boat.
Q. Row boats?
A. Yes.
Q. Were there any steam-boats went up there in the '50's?
A. Not in the '50's.
Q. Were there in the '60's?
A. Yes.
Q. A good many steam-boats went up there in the '60's?
A. No, not many.
Q. Do you remember the names of any of them?
A. There was one large steamer went up there from Lake Superior, name Manhattan, that I remember. That is the only large boat that went up there; the rest of it was ferry boats.
Q. Ferry boats?
A. Boat drawing five, six to seven feet of water.
Q. What kind of a boat was the Manhattan?
A. Manhattan was a large freight boat such as they used on Lake Superior them days.
Q. And it ran up the river then, did it?
A. It ran clear up to Fond du Lac.
Q. How often did it run up to Fond du Lac?
A. How long ago?

Q. How often did it run up to Fond du Lac?
A. Just one trip. She only made one trip.
Q. What did it go up there for; do you know?
A. I couldn't tell you now. I don't know whether she went up there with Government supplies for the Indians; I am not certain.
Q. But there were some other boats went up there in the '60's?
A. All of them ferry boats went up there.
Q. Were there some boats that went up there for lumber also?
1097 A. No, there was no saw-mill above Millford.
Q. But they went up to Millford, didn't they?
A. They went up to Millford after lumber, yes, sir.
Q. Did these boats that went up there for lumber sometimes go above Millford?
A. No, they just came to the mill, took part of their load and went out in the channel and finished their load in deep water.
Q. What is the first boat you knew of to go up the St. Louis River above Grassy Point, steam-boat I mean?
A. That is taxing a fellow's memory pretty heavy. I don't know, but I think it's that Manhattan.
Q. And that was in the '60's?
A. I think she went up there before any of them ferry boats.
Q. Before any of them. Was that in the '50's?
A. I couldn't say whether it was in the '50's or '60's.
Q. Now, did you run a boat up there yourself?
A. Yes, I ran one year on a boat.
Q. What was that boat?
A. Ferry boat.
Q. What was it called?
A. Stillman-Witt.
Q. When was that?
A. That was in the '60's.
Q. Was it in the latter '60's or early '60's?
A. It was in the '60's, I guess.
Q. You think it was in the later '60's or early '60's; which would you think, Mr. Desimval, or may be you don't remember; if you don't remember why that is all right; but if you have any
1098 judgment on it tell us, will you?
A. Let's see, '62—Yes, it was in the '60's, all right.
Q. Do you know what channel the boats took above Grassy Point in the '60's there when you navigated the river?
A. Yes, sir.
Q. I talked to you this morning, didn't I, about this?
A. Yes, sir.
Q. And when I asked you to tell me what course you took above Grassy Point you asked me for a pencil and paper, didn't you?
A. Yes, sir.
Q. And you made a representation on that of how the boats ran up above Grassy Point?
A. Yes, sir, I did.
Q. Was it pretty hard for you to hold the pencil?

A. Well, once in a while my hand shakes, I can't do nothing, and then can be steady for some time.

Q. But you did make me a little picture of the place your boat ran up above Grassy Point?

A. Yes, sir.

Q. How long since you have been up there?

A. Forty years.

Q. Haven't been up there for forty years?

A. No, sir.

Q. And you drew me a picture of how the boats ran when you went up there, didn't you?

A. Yes, sir.

Q. I show you Wisconsin's Exhibit 49 and ask you if that is the picture you drew me this morning? Is that the picture you drew for me?

A. Yes, sir; and the dock that I built.

Q. Show me where Grassy Point is?

A. Right here.

Q. I am going to mark this here now that you indicated, as Grassy Point. I am going to write on there "Grassy Point." Now where is the Wisconsin shore?

1099 A. On that side.

Q. Which side?

A. On this side here (indicating).

Q. Now I am going to write on here "Wisconsin shore" where you have indicated. Now where was your dock at Millford you have indicated? You put that on there this morning, didn't you?

A. Yes, sir.

Q. I have written on here "Millford dock" where you have indicated. Now where is the channel where the boats ran?

A. (Witness indicates).

Q. I am going to write out here "Channel."

A. We drawed that too close to the end of the paper here, ran right against the shore there (indicating).

Q. Now then, you have indicated the Millford dock. Where was that located?

A. On the channel.

Q. Who built that dock?

A. Myself.

Q. Yourself?

A. Yes, sir.

Q. When?

A. In 1860——

Q. In the '60's. What was it used for?

A. To finish loading lumber on that steamer that used to come up after lumber. They had to run up to the mill. The mill was on our pocket here. They used to run up the mill, take part of their load in there, just enough so they could get out. There wasn't water enough for them to take a full load so we kept lumber on the dock to finish loading there.

Q. The dock was out on the channel?

A. On the channel in the very edge of the water.
Q. In the water?
A. In the water.
1100 Q. And they would take part of the load at the mill and go out there and finish on the dock?
A. Yes, sir.
Q. How would you get the lumber on the dock?
A. On a scow.
Q. Is this course that you have indicated there as channel, is that the course that you took going up the river when you were running the Witt?
A. The Witt, yes, sir.
Q. And is that the course that boats generally took then?
A. That is the only course for boats to take. The other one is nothing, what they call the cut-off is nothing only for row boats and canoes.
Q. Do you know how deep water there was in that channel above Grassy Point?
A. Some places twenty-five feet and run from ten or twelve up.
Q. Up to twenty-five?
A. Yes. Above the Wisconsin Island I guess sounded about twenty-five feet.
Q. By "Wisconsin Island," you mean the Big Island?
A. Yes, the Big Island.
Q. How deep was it after you rounded Grassy Point there?
A. Oh, ten or twelve feet, some places ten feet and some places a little over.
Q. Now do you think this Wisconsin's Exhibit 49 is a picture of where the channel was with reference to Grassy Point, a correct picture?
A. Yes, sir.
Q. That is as you remember it?
A. Yes, sir.
Q. And you haven't seen it for forty years?
A. I haven't seen it for forty years.
1101 Q. How far from Grassy Point there was your preemption claim?
A. It was only three claims between it. One was Freeman Keene; the other one was Norton, and the other one was my uncle and me together. That would be a mile or mile and a quarter; little over a mile.
Q. Did the weeds or rushes grow up on the sides of that channel in the summertime?
A. Yes, rushes.
Q. Was there a current in that channel when you navigated it?
A. Yes, sir.
Q. Much of a current?
A. After a heavy rain there would be quite a current and if the wind was east from the northeast, blowing from the lake, flooding the water out, the current wouldn't be so strong.
Q. Did you go up the river on other boats?

A. Me?
Q. Yes.
A. I was engineer on a boat.
Q. What boat?
A. In that Stillman-Witt.
Q. Did you go up the river on any other boat?
A. I rode up.
Q. On what boats did you ride up?
A. That is the one I tried to get the name of.
Q. You can't remember the name of it?
A. No, sir.
Q. Did you go up frequently?
A. On the other one?
Q. Yes.
A. No.
Q. How often did you go up?
A. Two or three times.
Q. When was that, in the '60's?
A. Yes.
Q. Which channel did it go?
A. Went the same you got there.
Q. The same as you showed me on the picture?
A. Yes, sir.
1102 Q. What was that called?
A. Called the St. Louis River channel.
Q. Called the St. Louis River channel?
A. Yes; that is the only channel there was.
Q. You saw other boats taking that channel, did you?
A. Yes, sir.
Q. But don't remember their names?
A. I don't remember the name, no. That boat used to stop at the mill. I used to sell him slabs for fuel. He used to stop there about twice a week at the mill, taking on slabs.
Q. Then did it go up the river?
A. Went up the river, on his way up and on his way down.
Q. And going up the river above the mill did they take this same course that you have——
A. Same channel exactly. No two ways about it.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 49.
The Commissioner: Received.

Q. Were you on the river in the '70's?
A. Yes; I was on the river in the '70's.
Q. What boats were you on in the '70's?
A. I don't know. I either rode on that boat I can't remember the name of, or on that Stillman-Witt; I don't know which.
Q. Did you go up the river very many times in the '70's?
A. We used to go up twice and sometimes three times a week with the Stillman-Witt; we passed through.
Q. Sometimes three times a week with the Stillman-Witt?
A. Yes.

Q. What were you doing with the Stillman-Witt?
1103 A. Carrying excursions.
Q. You went up——
A. Used to go up there one day and out on Lake Superior the next day, excursions.
Q. But you ran it up there one whole season, did you?
A. One summer, yes.
Q. And would go up there two or three times a week?
A. Yes.
Q. Have you gone up the river on excursion boats, on other excursion boats?
A. No.
Q. Have you gone up on any other boats?
A. I went up once or twice on some of the other boats on the excursion.
Q. Were you out on the water of the St. Louis River a good deal up in that vicinity above Grassy Point?
A. When I lived at Millford?
Q. Yes.
A. Out there twice a day, you might say, in the summer, hunting ducks.
Q. You knew where the channel was?
A. I guess I did.
Q. Did you observe where the ice would melt in the spring first?
A. In the channel.
Q. Was that always true that it melted in the channel first?
A. Well, it did every year, I guess, every spring.
Q. That is, the channel you have indicated on Wisconsin's Exhibit 9?
A. Yes, sir.
Q. When did you move away from Millford?
A. About '68 or '69.
Q. '68 or '9?
A. Yes.
Q. How long did you live up there?
A. In Millford?
Q. Yes.
A. Eight or nine years. These dates taxes a man's mem-
1104 ory too strong; can't hardly tell.
Q. What is that?
A. Them dates taxes a man's memory too strong.
Q. You just came to Superior this morning, did you, or last night?
A. Last night.
Q. I wrote you to come up?
A. Yes, sir.
Q. You came in response to my letter?
A. Yes.

Cross-examination.

By Mr. Fryberger:

Q. You live in Menominee now?
A. Yes, sir.
Q. How long have you lived in Menominee?
A. I think it is forty years this month.
Q. Forty years?
A. Yes, sir.
Q. What business have you been in?
A. Where?
Q. Menominee.
A. Buying grain.
Q. Buying grain?
A. Yes, sir.
Q. For how long were you in that business?
A. I quit three years ago, and all the rest of the time I was buying grain.
Q. In connection with a brewery?
A. No, sir; buying wheat, barley, oats, and all kinds of grain.
Q. Who for?
A. For Mr. Schutte Quilling, with the elevator, and they sold out to a grain company, Mr. Roberts. I bought grain for him about fifteen years.
Q. Were you working on a salary?
A. Yes, sir.
Q. You bought grain from the farmers?
A. Bought grain from the farmers, cleaned them and shipped them in the car.
Q. And you worked on a salary during all of this time?
A. Yes, sir.
1105 Q. Did someone come up here with you to bring you up to Superior? Did you come alone?
A. I come alone, yes, sir.
Q. You left Millford, as I understand it, in 1868 or '69?
A. When I leave, you mean?
Q. Yes, when you left.
A. I think it's something like that.
Q. Where did you go then?
A. To Superior.
Q. What did you do in Superior?
A. I started to run a brewery.
Q. You started to run a brewery in Superior?
A. Yes.
Q. How long did you run the brewery?
A. Till my money was gone.
Q. How long was that?
A. Not very long.
Q. Well, how long?
A. Three or four years.
Q. Then what did you do?

A. I didn't do nothing. I carried mail from Duluth to Ashland.
Q. How did you carry mail?
A. Through the woods.
Q. In the summertime the mail went by boat?
A. Not hardly any. Often men had to do it with pack on the back.
Q. How long did you carry mail from Duluth to Ashland?
A. I had the contract for four years but the railroad got built in Ashland and then as soon as the train run in here the Government took the contract away.
Q. Broke the contract with you, did they?
A. Yes, sir; so I had about three years.
Q. Then when did you go to Menominee?
A. I go to Menominee forty years ago.
Q. Well now, you said you acted as engineer on the Stillman-Witt?
A. Yes, sir.
1106 Q. Where did that boat run?
A. Ran from Superior City to Duluth, Fond du Lac, Agate Bay, and sometimes down Fort William.
Q. Agate Bay is where Two Harbors is now, isn't it?
A. (No response).
Q. How far was Agate Bay up Lake Superior?
A. Thirty odd miles.
Q. How long did you act as engineer on that boat?
A. Pretty near all summer.
Q. One summer?
A. Yes, sir.
Q. And that is all the experience you ever had as a sailor, wasn't it?
A. Sailing sail-boats, small boats.
Q. That is, just a small boat for pleasure; something of that kind?
A. Yes.
Q. And that is the only time that you ever run on a boat as a sailor, part of one summer?
A. Yes, with the Government license.
Q. That is a boat with a Government license?
A. Yes.
Q. You weren't a pilot yourself?
A. I wasn't a pilot; I was the engineer.
Q. You never had any papers to run a boat, did you?
A. I had a Government license.
Q. For an engineer?
A. For an engineer.
Q. But not for a pilot?
A. I didn't say I ran for a pilot.
Q. I didn't say you did, but I say you didn't have papers to run as a pilot, did you?
A. I say, No.

Q. Now there weren't very many boats that ran up beyond Grassy Point prior to the time you went to Millford, was there?

A. No; there wasn't many before them *too* ferry boats came up from down below.

1107 Q. One of them you called the Stillman-Witt?

A. That is the first one that came up.

Q. And the other you can't remember the name?

A. I can't remember the name; that is the only two ferry boats that was there, of any size.

Q. While you were in Millford?

A. Yes.

Q. Now as I understand it, this ferry boat that ran up the St. Louis Bay or river beyond Grassy Point prior to 1869 used to stop at Millford at your mill and get slabs for fuel?

A. Yes, sir, one of them.

Q. Both of them did?

A. No, I didn't say both of them. I say one of them. The one that I don't remember the name.

Q. That stopped as it went up?

A. Sometimes as it went up; sometimes as it came down.

Q. To get slabs there for fuel?

A. Yes, sir.

Q. Then the boats that came up to get lumber from your mill never went any further than your dock?

A. No. They came up to the mill.

Q. Came up to the mill and got a part of a load of lumber and then they would go out to the dock?

A. And finish the load.

Q. Yes, where the water was deep. Now, are those the only two boats that you ever saw go up the river beyond Millford?

A. I see that steamer Henrietta go up the river one trip.

Q. Just one trip. Now you have named all the boats that you ever saw go up the river?

A. No; there is one, I can't think of the name.

1108 Q. There is one you can't think of the name?

A. Yes.

Q. Now, in the cut-off, what is known as the cut-off, that water was only deep enough, as I understand it, for row boats and canoes?

A. That is all.

Q. The Stillman-Witt didn't draw over four feet of water, did it?

A. No, she didn't draw that.

Q. Didn't draw four feet?

A. Not unless she was loaded to capacity.

Q. Then she wouldn't draw over four feet, would she?

A. Not much. She was a flat bottom.

Q. Flat bottom?

A. Yes.

1109 H. V. DESIMVAL was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. What is your full name?
A. Henry Victor Desimval.
Q. You are a son of the Desimval who has just testified?
A. Yes, sir.
Q. Where do you live?
A. 835 West Third, Central Park.
Q. How long have you lived in Central Park?
A. Since 1871.
Q. How long have you lived in Superior?
A. I was born there; that is all I know about it.
Q. Where have you lived since you were born in Superior?
A. I lived eight years of my life at Millford, after I was born, the first eight years.
Q. Then where did you live?
A. Superior City.
Q. You lived in Superior the rest of the time?
A. Yes, sir, as far as I know.
Q. What experience have you had on the waters of the St. Louis River above Grassy Point?
A. Well, in '88, '89, '90, and '91, I lumbered up on what I call section one, in Wisconsin.
Q. Where was that?
A. Opposite the Duluth Boat Club-house.
Q. That is the Spirit Lake branch, you mean?
A. It was in Wisconsin.
Q. It is opposite the Spirit Lake branch of the Duluth Boat Club?
A. They are up above Spirit Lake; just above it.
Q. Just above Spirit Lake?
A. Yes, sir.
1110 Q. Who were you working for?
A. Myself and my cousins; we were contractors.
Q. Did you know of Paton, Kimball & Barber?
A. Yes, sir.
Q. What were they doing?
A. They had a saw-mill sawing lumber.
Q. Where?
A. On Connors Point.
Q. Did you deal with them?
A. Yes, sir.
Q. Sell logs to them?
A. Yes, sir.
Q. Did you go up or down the St. Louis River very often in the '80's?
A. Well, it would average about twice a year with the rafts. In

the summer of '88, rafted two rafts, we sold to him, and brought them down with the Nellie Cotton.

Q. Who did the Nellie Cotton belong to?

A. Paton, Kimball & Barber.

Q. How many rafts of logs did you bring down the river or did you come down with?

A. Oh, it would average seven or eight rafts in all, of logs.

Q. Did you go up and down the St. Louis River any other times than when you went up with the rafts, up and down with the rafts?

A. Outside of the rafts?

Q. Yes, outside of the rafts.

A. Nothing any more than small boats or riding with the pleasure boat.

Q. How did the Nellie Cotton come to bring your rafts down?

A. Why, I sold my logs to them, to Paton, Kimball & Barber.

Q. And the Nellie Cotton brought them down?

A. Yes, sir.

Q. Do you know who was running the Nellie Cotton at that time?

A. Yes, sir.

1111 Q. Who?

A. Jack Jeffry was captain.

Q. What course did he come down the St. Louis between Grassy Point and Big Island?

A. Well, he always took the channel, the St. Louis River.

Q. By the "channel," what do you mean?

A. The St. Louis River.

Q. After you round Grassy Point going up which way does it run?

A. After you passed Grassy Point a little ways it runs to the west, makes a sort of circle there. I couldn't tell it by words; I could mark it out.

Q. Does it run close to Minnesota or the Wisconsin shore?

A. I would say the Minnesota shore. You mean the main line, the main shores?

Q. The main channel.

A. You mean the main shores, the Wisconsin main shore or the Minnesota main shore?

Q. I mean the Minnesota main shore.

A. It runs close to it.

Q. It runs close to the Minnesota main shore?

A. Yes.

Q. What did he do in bringing the rafts down?

A. When I sold the logs I was always under contract to raft them logs and follow them down with one or two men with me, so we would have no trouble on the way down.

Q. Then did you ride on the Nellie Cotton or on the logs?

A. On the logs.

Q. And what did you do, what was your purpose in riding on the logs?

A. Watching them logs; watching them rafts from getting mixed up out of the channel and getting into obstructions that is along the channel.

1112 Q. Was there a channel there that was called the main channel between Grassy Point and the Big Island?

A. We always called it the main channel.

Q. Main channel of the St. Louis River?

A. Of the St. Louis River.

Q. And did you go down that main channel?

A. Yes, sir.

Q. Do you know where the Carnegie Dock is now located?

A. No, I do not.

Q. Do you know where the Zenith Furnace Company dock is located?

A. No, I do not. I know about where they are, but I haven't seen them.

The Commissioner: Where did your tug hitch on to your raft?

The Witness: Just opposite that boat-club house of the Duluth Boat Club.

Mr. Gard: That was above Spirit Lake?

The Witness: Yes. That is that point that sticks way out up there, the only point that sticks out on the Minnesota side, clear to Fond du Lac, high land.

The Commissioner: How far below Fond du Lac was it?

The Witness: In miles, I couldn't say exactly; I wouldn't say exactly.

By Mr. Gard:

Q. I will show you Wisconsin's Exhibit 1 and will ask you to indicate the course those logs came down above Grassy Point. Now you locate Grassy Point there, do you?

A. Yes, sir, it is here.

Q. That is Grassy Point and here is Big Island?

1113 A. Which way you got this map, looking up or down? I am looking down. I want to look up. This is the bay down here.

Q. That is Superior Bay?

A. Yes, I want to look up; that is Grassy Point?

Q. Yes. Now then, indicate the channel as it rounds Grassy Point; indicate which way it runs going up?

A. Why, we came along here and would go along this way and in here and swing around this way. Do you want to go by this Big Island?

Q. Yes.

A. Keep coming right up here and then you come in and go on by the Big Island. We come closer to this side here of the Big Island. Here is the Wisconsin shores again and here is the cut-off, and there is another little cut-off right in there (indicating). This is Spirit Lake; come up here to the tow-heads, and here is where my logs was; here was my camp up here.

Mr. Fryberger: I want the record to show just exactly how he went from Grassy Point and also that he didn't go anywhere near

the channel marked H, but did go very near the channel marked on Minnesota's Exhibit 1 as the main channel.

The Witness: Pretty hard to tell unless I went up there and go right over it.

Mr. Gard: Can you read the map?

The Witness: I can't read the map.

Mr. Hanitch: I think the record should show that the line he indicated started from the red line at the southwesterly end of Grassy Point, then passed north——

The Witness: That's west.

1114 Mr. Hanitch: Passed westerly about midway between the point marked B and a little square enclosed piece on the black line, passing from point B to the southerly side of Big Island.

The Witness: That's your marking there. That is the cut-off. I did not go there.

Mr. Hanitch: You went over in here.

The Witness: I came right around here; not quite to the red line; I don't know anything about that red line.

Mr. Hanitch: You go what direction from the red line?

Mr. Gard: Just wait.

The Commissioner: Let Mr. Gard examine the witness.

Mr. Hanitch: We want the record to show——

The Commissioner: Let Mr. Gard examine the witness.

Mr. Hanitch: I desire to have entered on the record this fact: the witness has pointed on Wisconsin's Exhibit 1, has pointed the line which he says that the channel took past to the northerly side of Big Island. We now ask that the record show the line which he pointed out with his pencil, and as I understand, this Commissioner now objects to our having the record show the line which he points out.

Mr. Gard: The Commissioner hasn't objected to anything of the kind. You are trying to make some argument here.

The Commissioner: Go ahead and examine the witness, Mr. Gard.

By Mr. Gard:

Q. Now I wish you would get your bearings here.

A. I should go on the river and I would get that just exact.

1115 Q. You are not accustomed to reading maps, are you?

A. No, sir, I am not.

Q. You see Grassy Point here?

A. Yes, sir.

Q. And do you remember where Millford is located?

A. Millford would be in here somewhere; right in here (indicating).

Q. Now, then, you are pointing to a cross on the red channel, are you not?

A. I don't know what it is.

Q. There is a cross there, isn't there? That's where Millford is, isn't it?

A. Somewhere in there; I wouldn't say exactly.

Mr. Hanitch: Have the record show that "I wouldn't say exactly."

Mr. Gard: I suppose the Reporter will get the witness without your arguing the case, Mr. Hanitch.

The Commissioner: Go ahead and don't start to argue the case.

By Mr. Gard:

Q. Have you located yourself on this map, do you think?

A. Let's find where Spirit Lake is.

Q. There is Spirit Lake up there (indicating).

A. That is the lake. Where is the town?

Q. I don't know what you mean by town.

A. Spirit Lake town. It's at the foot of Spirit Lake here somewhere; right in here somewhere.

Q. Now then, I want to ask you——

A. The course we ran close to there (indicating). Right down here is where Lenroots lived.

Q. You are pointing to the westerly of the Big Island, are you?

A. Yes, sir, westerly of the island; this is the island.

Q. Did you or did you not run close to Millford as you
1116 came down with the logs?

A. Certainly we wasn't but a very short distance from Millford dock.

Q. Was the Millford dock on the channel?

A. It was right close to the main channel.

Q. Now, then, can you indicate, do you think, the main course you took after you rounded Grassy Point?

A. To come home from down here (indicating)? Which way do you want to go?

Q. Going up.

A. Where is your bridge down here?

Q. Well, the bridge crosses there somewheres at Grassy Point, yes.

A. We go through that bridge. Now you see this thing here (indicating). How far is it across there?

Q. Well, that's——

A. That's for me to say. I am reading a map that I don't know anything about. I should have my own outline.

The Commissioner: Can you make an outline?

The Witness: I think I could make one but not correct; no doubt it wouldn't be just correct.

The Commissioner: Make one as correct as you can. Here is some paper.

Mr. Gard: You may make a picture there of the way you ran around Grassy Point.

The Witness: Will I indicate where that change was, too?

Mr. Gard: No; you make your picture now the way you ran.

The Witness: Shall I make the line around Big Island?

Mr. Gard: You put Big Island in where it is. Mark Grassy Point. Now put Millford if you can. Make a cross. Now, then, write Millford.

1117 A. Shall I put "channel" or "river"?

Q. Mark it channel or river whatever you like.

The Commissioner: Do you know where the cut-off was?

The Witness: Yes.

The Commissioner: Mark that.

By Mr. Gard:

Q. That mark that you have marked "channel" is continuous down below Grassy Point and above Grassy Point?

A. Yes, yes.

Q. Above Spirit Lake?

A. Yes; down here is that point and over here is what I always called section one. There is a bay in here (indicating).

Q. Now then, mark where you got your logs?

A. Right just about here is, what do you call it; and in here is that bay that runs over through a little opening out to the river.

Q. Where were your logs?

A. I had them stored in there (indicating). I had them stored.

Q. Mark "logs" there, will you. Now where you have marked "logs" is the vicinity from which the logs were towed, is it?

A. Yes, sir, and this is the boat-club.

Q. You can mark "boat-club" there, if you want to. You said you didn't know where the Zenith Furnace Company is located?

A. No; it is all of eighteen years——

Q. Since what?

A. Since I have been up the river.

Q. Is Wisconsin's Exhibit 50 the picture that you have drawn for us?

A. No. This is my own.

Q. Wisconsin's Exhibit 50 is the picture that you have
1118 just drawn for us, isn't it?

A. I don't understand what you mean by Wisconsin's exhibit.

Q. It's just marked.

A. Oh, yes. That, that paper.

Q. Yes, paper marked Wisconsin's Exhibit 50.

A. I have got you. That's my drawing.

Q. Does that which you have indicated as "channel" represent the course that you brought the logs down?

A. Yes, sir.

Mr. Gard: We offer Wisconsin's Exhibit 50 in evidence.

Mr. Fryberger: We object to it on the ground that it is immaterial and doesn't mean anything.

The Commissioner: Received subject to objection.

Q. What other experience have you had on the waters of the St. Louis River above Grassy Point, Mr. Desmval?

A. None other outside of lumbering.

Mr. Fryberger: I want to add to that objection: Unless it means

that the line he took was the same line which is marked on Minnesota's Exhibit 1 by A, G, B, and C.

The Commissioner: The exhibit will be received for what it is worth, but it is plain that the witness is in confusion in examining the map.

Mr. Bailey: Plain what?

The Commissioner: That the witness didn't understand that map.

Mr. Bailey: I don't think that is a fair statement. The witness drew a map substantially where the line on Exhibit 1 is shown. I don't think it is a proper statement to say that the witness did not understand the map.

Mr. Gard: It isn't true to say that the witness indicated
1119 the line indicated on Minnesota's exhibit there as the red line. I saw him, and he went between the lines. He didn't indicate either line. He didn't indicate the line that indicated the main channel nor he didn't indicate that line.

The Commissioner: I am unable to decide upon the dispute between counsel. I am only able to ascertain that the witness was in confusion in examining the map.

Mr. Fryberger: I wish to enter an objection on the record to this Commissioner making any comment of any nature upon this testimony as to whether the witness is confused or not, and I think that the duties of the Commissioner are confined, not to trying the Wisconsin side of the case, but merely to taking the evidence.

The Commissioner: The Commissioner is not trying either side of the case but desires to have the evidence come as intelligibly——

Mr. Bailey: The evidence is all in and Your Honor was making some remark about it after it was in.

Cross-examination.

By Mr. Hanitch:

Q. Mr. Desimval, you have never navigated any boats up the river yourself, have you?

A. No, sir, I did not.

Q. The only experience that you have had, then, was in getting these logs down from where you were cutting them, to the Paton, Kimball & Barber mill which was on Conhors Point?

A. No, not altogether. I have taken down a lot of cord
1120 wood and a lot of cedar.

Q. Cord wood and cedar from the same place?

A. Above that.

Q. But you didn't run the boats in taking them down, did you?

A. No; but I had to do with them.

Q. You were with them when they went down?

A. Yes.

Q. Now this which they call Wisconsin's Exhibit 50, and the drawing which you made, locates the channel as you remember it as to Grassy Point and as to Big Island?

A. That is, in my mind's eye it does.

Q. And that is the way you came down as you now remember it between these two head lands, that is, between Big Island and the Grassy Point?
A. Yes, sir.
Q. About that distance from each?
A. About what?
Q. About that distance from each, as you have indicated on this drawing?
A. Yes, sir.
Q. As I recall your testimony you said that this occurred in '89, '90, and '91?
A. '88.
Q. '88, '89——
A. '90 and '91.
Q. You haven't been up the river, you say, during the last eighteen years?
A. Not that I recollect of, no, sir. I was sick a good many years.

By Mr. Fryberger:

Q. You are a son of this old gentleman that was on the witness stand just ahead of you?
A. Yes, sir.
Q. Now, Captain Jeffry would know how he brought down those logs, wouldn't he?
A. I think you will never find out from him.
1121 Q. Will you answer the question?
A. I think he is in his grave.
Q. That Jeffry is in his grave?
A. Yes, sir. It's Captain Jeffry.
Q. It isn't the one that is alive now?
A. I don't know any Captain Jeffry now.
Q. What was his name?
A. Jack Jeffry.
Q. He isn't dead, is he?
A. I supposed he is; I heard he was.
Q. When did you hear that?
A. A year ago.
Q. How many logs did you bring down from your claim?
A. Do you want to know in all, or each season?
Q. Well, we will take it in all now?
A. Ten million.
Q. From your claim?
A. I have no claim.
Q. You had no claim; you got these up there?
A. Yes, sir.
Q. And Jack Jeffry towed them all down?
A. Yes, sir.

Redirect examination.

By Attorney-General Owen:

Q. Did you know of a deep water channel that ran from Grassy Point up past Big Island, independent of the experience you got from hauling the logs down?

A. No, sir, I did not.

Q. All you knew about that water, then, was the experience you got in hauling these logs down, wasn't it?

A. Sir?

Q. All you know about that water is the experience you got in hauling those logs down or rafting your logs down?

A. Well, in going back and forth with a small boat, too. I went a great many times with a small boat.

1122 Q. You said you went close to the Millford dock?

A. Yes, sir.

Q. How close to the Millford dock did you go?

A. I couldn't state in feet exactly, but probably 150 feet.

Q. Within a hundred and fifty feet?

A. (No response).

By Mr. Gard:

Q. Do you know what depth of water there was over which you were traveling in bringing your logs down? Did you have occasion to find out?

A. Well, I knew it was twelve feet and over, for the tug drew twelve feet of water in its normal condition.

Q. Did you have a pike pole?

A. Yes, sir, I had a sixteen-foot pike pole.

Q. What were you doing with it?

A. Watching the tail end of these logs from swinging around into trouble.

Q. Did you have occasion to put it on the bottom frequently?

A. Once in a while when the current would catch the tail end we would have to hold it from swinging over.

Q. What depth of water did you find?

A. Three or four feet when we got to the bank.

Q. And what kind of water did you find in the channel?

A. Generally couldn't do anything with our pole.

Q. With your pike pole?

A. With our pike pole when we were in the channel.

Q. Couldn't reach the bottom, you mean?

A. No, not to do anything.

Q. That is, you couldn't get a hold in the channel to push the logs off?

A. No. Should I state just how them logs were rafted

1123 and how they went?

Q. You may do that.

A. We had them logs rafted and we had them rafted only 85

feet wide for the drawbridge. They call it St. Paul and Duluth bridge up there.

Q. At Grassy Point?

A. That railroad bridge. That is just ninety feet them days in width; and we had to allow for bows in our raft and averaged 85 feet in width, and as long as you liked; the longer we got it the more trouble we had holding the tail end from getting in trouble coming down the river.

Q. How do you mean getting in trouble?

A. The current catching the tail end and swinging out of the channel in the rubbish. There would be places along there there would be a strip with old logs and old dead heads.

Q. Outside of the channel?

A. Yes, sir, outside of the channel.

Q. Well, was there apparently a well defined channel that you came down?

A. Yes, sir.

Q. Was there a current in it?

A. Why, it depended a great deal on the conditions of the water and the rains. If we had violent rains and storms it would be a very strong current, and if we had a heavy northeaster a day or two and when that receded it would be a very heavy current. We never knew what would happen from one day to another in that matter.

Q. Did you come down the channel in which the current ran?

A. Yes, sir.

Q. How long were your rafts?

1124 A. Oh, they were something like between 800,000 and a million feet in them. It would vary in the size of the logs. Small logs it would be a real long one; great big nice logs it would be smaller, shorter, take less of them for a thousand.

Q. Well now, you may state whether or not you found current all the way down past Grassy Point?

A. Why, yes, all the way till we got there, quite a ways through that draw there; there it narrowed right up into the draw.

Recross-examination.

By Mr. Hanitch:

Q. Did you say that the Nellie Cotton drew twelve feet of water, in your testimony?

A. Yes, sir.

Q. That is your judgment?

A. That is my judgment of it.

Mr. Fryberger: Now before the adjournment I want to add to our objection to the interference of the Commissioner: that when we consented to the appointment of this Commissioner we understood that he was to exercise only the powers of a commissioner the same as a notary public and to take what was presented and certify the exhibits, and not to interfere or help try the case, and so far as we are concerned we stand upon that proposition. It has gone to such

an extent that we object to it, and I understand that General Owen understands the same as I do about the powers and duties of commissioners, and that he should not make any comments or ask any questions or help try the case in any way. Am I right, Mr. Owen?

Attorney-General Owen: I apprehend that there can be no
1125 doubt about that. Probably the Commissioner will agree with that himself. Of course, I will say that when the matter of the appointment of commissioner was up, it was the subject of, I think, three conferences between myself and General Smith. You were present at one; that was the last one when we drew up our stipulation; and I suggested the name of Judge Roberts, as you will remember.

Mr. Fryberger: And it was referred to me.

Attorney-General Owen: And you and General Smith talked it over and agreed to it. I want it to be understood, and I want to be fair and square with the other side. It was the understanding that the Commissioner would just simply take the testimony, preside and keep order and so forth, and report it. At first we didn't know what the attitude of the Court would be, whether they would want to appoint the Commissioner to take evidence and make findings or simply to report the evidence. In the event that a Commissioner was to be appointed to make findings, then we discussed the question whether it would be advisable may be to have three, but at any rate we agreed that if a Commissioner was appointed to take evidence he shouldn't be a resident of either state, either Minnesota or Wisconsin, but when we learned that all the Court wanted was the evidence taken and reported, we canvassed names, and the name of Judge Roberts was suggested by myself, and finally agreed to
1126 by yourself and General Smith; and as far as I am concerned, of course, we rather think that you were right in standing on that proposition.

The Commissioner: The Commissioner isn't here for the purpose of taking sides at all. At the time the dispute arose the Commissioner was unable to determine which contention was right, whether the contention of Mr. Gard or counsel on the other side, but it was evident to me that the witness was in confusion, didn't understand the map. The only purpose that I had in making any ruling at that time was to get the witness so he could testify what he wanted to, what he meant.

Mr. Fryberger: Judge Roberts, to be perfectly frank, we don't think that you have any power or right to ask questions here at all. That is our position, and we have objected to it. Your powers are those of a notary public, as I understand it, to take testimony, and while we don't want to be impertinent in any way, it has run to a point where it came to the breaking point.

The Commissioner: If you will object to my asking questions I will concede that it is well taken.

Mr. Fryberger: We do, or interference with the orderly procedure; and we object to it, and to your comments on the testimony of any witness. I understand that where we say that he has pointed to a certain line you cannot say anything; that the record shows that

there is uncertainty about it; that he claims one thing and
1127 we claim another.

The Commissioner: It may be that I have got a wrong conception of what I can do here. While I can't sit here and rule on the materiality or relevancy of any evidence that is offered, I take it that the power of keeping order exists somewhere. When we are all talking at one time it is impossible for the Reporter to get it down.

Mr. Bailey: When this question came up counsel were trying to agree upon the line that the witness has pointed out, and Your Honor set that aside and said, "Go ahead."

The Commissioner: When the witness said he didn't understand this map I thought it was time and get some place——

Attorney-General Owen: I was going to remark that I fully agree with the Commissioner, that he probably has the power to preserve order if there is any occasion for that.

The Commissioner: It is perfectly clear that you were all talking together and the Reporter couldn't take it.

Mr. Fryberger: I don't want to refer to this again. I want to make an objection, and I understand you join with us, to the Commissioner's taking part in the taking of the testimony.

Attorney-General Owen: I think your position is right.

Mr. Gard: To the extent of what?

Attorney-General Owen: That the Commissioner shouldn't ask questions.

1128 Rec'd Aug. 31, 1917. D. T. Roberts, Commissioner.

FEDERAL BUILDING, SUPERIOR, WISCONSIN,
THURSDAY, August 16, 1917, 10 a. m.

The taking of testimony was resumed before the Commissioner, Hon. David E. Roberts, at the above time and place.

Present: The Commissioner, Hon. David E. Roberts.

On behalf of the State of Minnesota, Mr. W. D. Bailey, Mr. H. B. Fryberger, and Mr. Louis Hanitch.

On behalf of the State of Wisconsin, Hon. Walter A. Owen, Attorney-General of the State of Wisconsin, Mr. Horatio V. Gard, and Mr. Lyman T. Powell.

The following testimony was introduced and the following proceedings were had, to-wit:

JOSEPH JACOBS, called as a witness by the State of Wisconsin, was duly sworn, by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Mr. Jacobs?
A. 211 South Seventieth Avenue West, Duluth.
Q. How long have you lived there?

A. Fifteen years.
Q. How long have you lived at the head of the lakes?
A. Forty-six years.
Q. What is your business?
A. Tug captain.
Q. How long have you been tug captain?
A. Since '93.
Q. What were you doing before you were tug captain?
1129 A. Linesman, deck-hand, firing on tug.
Q. What was your first experience on a tug?
A. Deckhand.
Q. On what?
A. Tug Merchant.
Q. Explain just what the duties are of a deckhand on a tug.
A. Why, he is learning the business of pilot.
Q. Is the position of deckhand on a tug any different from deckhand on a regular vessel, usually?
A. Yes, sir?
Q. What?
A. A deckhand on a vessel doesn't do anything only handle freight and lines, do the general cleaning up around on a boat. A deckhand on a tug as soon as he shows that he has the qualifications in him for a pilot, the captain lets him handle the boat and learns him the business.
Q. Now, you say your first experience was on the tug Merchant?
A. Yes, sir.
Q. When was that?
A. In 1887 and '88.
Q. What was the Merchant doing at that time?
A. Towing sandstone from Fond du Lac.
Q. To what place?
A. To the sandstone dock on Minnesota Point about a block north of the canal.
Q. The Duluth canal?
A. Yes, sir.
Q. How often did you make trips from Fond du Lac to that point?
A. Oh, I couldn't say as to that.
Q. Well, about how often?
A. Oh, I should judge about two trips a week, two round trips.
Q. Were you engaged in that business during the entire seasons of '87 and 88?
A. No, sir, just during the period of vacation at school.
1130 Q. You were going to school at that time?
A. Yes, sir.
Q. How old were you?
A. 16 years of age.
Q. And you spent your vacations on this tug?
A. Yes, sir.
Q. As deckhand?
A. Yes, sir.
Q. Now, did you sometimes hold the wheel?

A. Why, yes.

Q. Had you had any experience on the St. Louis River before that time?

A. Why, as running away from school and riding with him, yes, sir; why, yes, I have had considerable experience.

Q. You had been riding up with him before that?

A. Yes, sir.

Q. Had you ridden up on other boats before that?

A. Yes, I think I did ride up on the Maggie Carroll. There was the Maggie Carroll and the Merchant was doing the towing from up there at that time or before '87 and us boys used to ride considerable on her. I couldn't say as to the number of trips I made or when I made them.

Q. But you had made trips up the river before you went on this tug as a deckhand?

A. Yes, sir.

Q. And about what time of the year then did you go on the Merchant as a deckhand in '87?

A. Along some time in June, about the first of June, around the first of June, I should say.

Q. And did you run the rest of the year, the rest of the season?

A. No, sir, oh, probably, anywhere between June the 25th and the first of September until school period started again.

Q. And was that true of the season of '88 also?

A. Yes, sir.

Q. About the same length of time?

A. Yes, sir.

Q. And doing the same kind of towing, towing stone?

A. Yes, sir.

Q. That was stone for building purposes?

A. Why, I don't know what it was for. All I know it
1131 was brown stone and we towed it down. I had no means of finding out what they were going to use it for.

Q. Now you say you made about two or three trips a week?

A. I think about that.

Q. And what other experiences have you had on boats up the St. Louis River?

A. Season of 1900 I was on the John McKay towing logs from up there.

Q. What kind of a boat was the McKay?

A. She was a tug.

Q. And where were you towing logs from?

A. Why, they were the logs that came down from that Cloquet dam, at least I am under the impression they was the logs. We picked them up along the river most anywheres, that is above Little Pokegama Bay back of them flats, they brought them up to put them into a boom and we towed them down to a yard that was the west side of Garfield Avenue, pretty well up in the bay where they were loading them on cars.

Q. And you towed them from above Spirit Island?

A. Well, Spirit Island is in the middle of Spirit Lake; we towed

them from above Spirit Lake, some of them from below, some of them from over right on the end of Pokegama Point, and some of them from in back of this island. There is a kind of a—well, it is a kind of low land, marshy place over in there and there was a lot of them backed up in that and I think we got one or two rafts from over in there.

Q. Well, now, what other experience have you had on the St. Louis River?

A. In '91 I fired a tug, the James Bardon towing rock from up there.

1132 Q. From where to where?

A. Why, most of the rock we towed at that time came in here to Tower slip.

Q. From where?

A. Fond du Lac.

Q. What kind of a boat was that?

A. Why, she was classed as a tug. She had been formerly a seagoing tug. The port side of her was flat, the starboard side she had a bustle on her.

Q. Now, that was in '91?

A. 1891.

Q. And what other experience have you had on the St. Louis?

A. Why, I didn't have any experience up the St. Louis River then until 1897. I towed those rafts down from up river with the tug Douglas.

Q. From where?

A. From what we call Little Pokegama. That is just about half a mile below the Boat Club, where the Club is now.

Q. Well, that is above Spirit Lake?

A. No, not above Spirit Lake. You go around the point of Spirit Lake and it is just about half way around that point.

Q. But it is above Big Island?

A. Yes, I should judge about a mile above the island.

Q. And where did you tow those logs to?

A. We towed them to Duncan & Brewer's mill.

Q. Where was that?

A. At the foot of thirty-ninth Avenue West in Duluth.

Q. Is that below the St. Paul & Duluth bridge?

A. Yes, sir.

Q. That is below Grassy Point, then?

A. Yes, below Grassy Point bridge.

Q. That was in '97?

A. That was in '97.

1133 Q. What other experience have you had on the St. Louis River?

A. Why, I worked for the Jeffreys several seasons——

By Mr. Fryberger:

Q. Which Jeffrey?

A. Jeffrey Brothers Tug Line. 1906, 1907, 1909, 1910, 1911,

1912 and 1913, and I have had more or less experience towing brown stone, that is a scow occasionally for Crowley from up there, up from Fond du Lac, down to where some of it went to Superior, some of it went to these bridges out here, used for filling crevices.

By Mr. Gard:

Q. When you were working for Jeffrey?

A. Yes, sir.

Q. What experience did you have up the river?

A. Why, we went up after scows occasionally whenever Crowley had any rubble or anything of that kind we towed it; that is I didn't tow it all but I was sailing around on the tugs over there.

Q. When did you first become familiar with the channel of the St. Louis River above Grassy Point?

A. 1888 or 1887 and '8.

Q. To what extent did you hold the wheel in 1887 and '8?

A. Oh, I presume about two-thirds of the time.

Q. The master was teaching you then?

A. Yes, sir.

Q. In going up the river after you went through the St. Paul & Duluth bridge at Grassy Point, how did you go?

A. You mean with the Merchant?

Q. Yes.

A. Well, we always went through the cut-off.

Q. And how did you come back?

A. Come back the old channel.

Q. Why did you go up through the cut-off?

A. Why, it was shorter.

Q. And why did you come back the main channel?

A. Because I was always led to believe from Captain Osborne that there wasn't water enough there for boats, and it was a
1134 dangerous place to fetch a loaded scow down.

Q. In coming down the main channel you came northerly of Big Island?

A. Yes, sir, westerly and northerly, northwesterly of Big Island.

Q. And you came down what was known—what did you call it?

A. The main channel.

Q. You called it the main channel?

A. Yes, That is what I was always told it was.

Q. And was it generally known as the main channel?

A. As far as I knew anything about it, it was.

Q. Well, now, do you know how that channel runs after you round Grassy Point?

A. Yes, sir.

Q. How does it run?

A. It runs in a northwesterly direction until you get to full and by the Zenith Furnace and then you make a circle there and go back out to a little island as I presume is about twenty-five hundred, two thousand or twenty-five hundred feet off the shore and you make another circle the other way, it is kind of a compound curve,

you come back into the old brick yard, and then you go right on out again almost over to Big Island or within about a thousand feet of Big Island and then you come into Spirit Lake and from Spirit Lake you make a gradual turn around up Big Island—southerly end of Big Island.

Q. After you round Grassy Point is this channel near the Minnesota shore or the Wisconsin shore?

A. After you round Grassy point?

1135 Q. Yes, after you round Grassy Point?

A. Well, if Grassy Point is in Minnesota, yes, sir.

Q. How close to Grassy Point do you run after you round the point there up the westerly side of Grassy Point?

A. Oh, about 400 to 450 feet.

Q. Does the channel run fairly close to Grassy Point all the way up there to the Zenith Furnace or the Minnesota shore, I mean?

A. Well, speaking of Grassy Point them bulrushes there make almost right up to the point, the bulrushes come right to the bank of the channel and we used to run within 75 feet of the bulrushes. Now I never was up that river only when the bulrushes were up. As a matter of fact I don't believe I could go up there because that was practically the only guide we had to guide us up and down the river with the exception of one range after we turned Grassy Point to go over to the furnace there was an old black shack up on the hill, we used the smoke stack of the Zenith Furnace with the north end of that shack, just when we could see daylight between them, that was the range we went up there on. I couldn't go very far without the bulrushes.

Q. Was that main channel there straight or was it a gradual circle?

A. It was straight. You could run on that range.

Q. Then how close did you go to where the Zenith Furnace is?

A. You mean the furnace proper or their dock?

Q. To their dock.

A. About 450 to 500 feet. You was into the swing of the channel there when you got abreast of that dock.

1136 Q. There was a swing there?

A. Yes, you started to make that curve just a little bit before you lined up with the limestone dock, or the furnace.

Q. That dock didn't extend out over the channel, did it?

A. Oh, no, I don't think that dock is over 350 or 400 feet long. I don't think it is that long. I don't think it is over 300 feet long.

Q. Have you been there recently?

A. Yes, sir.

Q. Does the Zenith Furnace Company dock extend over the channel you used to traverse?

A. Yes, sir.

A. I think about four-fifths of the Carnegie dock is over that channel or from the starboard bank of the channel out I think it is four-fifths of it.

Q. Did you find deep water around in that channel there, aroun southeasterly of the Zenith Furnace Company dock?

A. Southeasterly, that would be the channel from the end o Grassy Point up to the Zenith furnace?

Q. Yes.

A. Oh, yes, as much water as we wanted.

Q. Did you ever pike pole it?

A. Not there, no, sir.

Q. Did the weeds or rushes mark the channel pretty definitely, that is on either side?

A. Oh, yes, just the same as a fence.

Q. I show you Wisconsin Exhibit 1 and ask you to locate this on that chart. Locate Grassy Point. Do you see Grassy Point?

A. Yes, sir.

Q. Do you see Big Island?

A. Yes, sir.

Q. Can you tell about where the Zenith Furnace Com-
1137 pany is located with reference to that chart?

A. Where is that island?

Q. You mean the island out in front of the Zenith Furnace Company?

A. Yes, sir.

Q. Where I am pointing, there. Now will you show me the channel that you took rounding Grassy Point and up stream from that point?

A. The channel we took up?

Q. Yes.

A. We come by Grassy Point.

Q. Just wait. You now understood me to mean the cut-off, didn't you?

A. Well, that is the one we took up.

Q. You may show me the channel then you took as you went up.

A. We come by Grassy Point here about 600 feet right straight along up this channel here and when we got about over 600 feet we lined up to a point about 400 feet north of that little island and we went across right straight there to within a line of about 200 to 250 feet of that little island and then we swung off up here, up above that point about 250 to 300 feet of that little island until we opened up Pokegama so that you could look up in there. And then we steered right straight up Pokegama here or followed the bulrushes, there were bulrushes right up to within the southerly bank of the channel going into Pokegama, came out there, oh, I guess about a thousand feet and you ran up until you almost hit the bulrushes and then followed the bulrushes and went through the cut-off.

Q. Around Devil's Elbow?

A. Around Devil's Elbow, yes, sir.

Q. After you got up to the little island you speak of you took substantially the course that is marked with black ink D, did you?

A. Yes, sir.

1138 Q. But you didn't take the course from Grassy Point up to Big Island that is indicated there by any line, did you, up to the little island, I mean up to that little island there.

A. Why, yes, we went off up here that way.

Q. Yes, but you didn't follow through the red line or the black line?

A. No, sir, not until we got up to that little island and then when we got to the little island from about 300 foot north of the northerly line of this little island I think, until we got through up at this end it was full of deadheads and logs, it felt like, the tug going over them and striking them.

Q. Now, show me what course you came down the river with your loads.

A. We followed along this red line down by Spirit Island and off in here to the brick yards and out to that little island off the Zenith furnace and back around the Zenith furnace up to within 400 or 450 feet of their dock and went out again and followed Grassy Point or the bulrushes right around Grassy Point.

Q. Now, you have indicated that red line upon which there is a letter H, haven't you?

A. Yes, sir.

Q. That is the way you came as you came down the river with your loads?

A. Yes, sir, although we towed logs we picked up here off the end of Pokegama and those we took up back in on the northeasterly side of Big Island, we took them down through the cut-off here, but we never went down through there with a load of sandstone, scow loaded with sandstone.

Q. Now, the channel you have indicated and which you
1139 have referred to as the main channel is the channel that is marked H with a red line?

A. Yes, sir.

Q. And that is the channel you say was known as the main channel?

A. Yes, sir.

Q. Now in going northerly of Big Island did you always take that channel?

A. Why, there was no other channel to take.

Q. Well, then, you did always take that channel when you went northerly of Big Island?

A. Yes, sir.

Q. And you always took that channel unless you went the cut-off?

A. Yes, that is the only two channels, I know is the one through the cut and the one around by the furnace.

Q. Did you find current in that main channel?

A. Yes, sir.

Q. How far down did you find current?

A. Down to what is known as the Superior entry, Superior head.

Q. Where was the current most marked?

A. Why, all the way down until you got through Grassy Point, until it started to flatten out here in the lower bay.

Q. There was considerable current, was there, all the way down to Grassy Point?

A. Yes, sir.

Q. You are speaking now of the main channel, are you.
A. Yes, sir.
Q. Did you find current in the flats that you crossed over in taking the cut-off?
A. Yes, sir.
Q. To any extent?
A. Why, I don't think there is any perceptible difference in the main channel and the current on them flats.
A. Well, did you find current all over those flats?
1140 A. All over yes, every place I was up that river there has been a current.
Q. Where did the current come from in the flats there?
A. You will have to ask somebody who knows more about that than I do. I have no idea. I suppose it come from the St. Louis River.
Q. Was the Milford dock in existence when you ran up the St. Louis there?
A. I have no recollection of that dock.
Q. Was there a Spirit Lake dock when you went up there?
A. There was a little old crib dock there built out of sawlogs, very short dock.

Cross-examination.

By Mr. Fryberger:

Q. What is your age, Mr. Jacobs?
A. Forty-six.
Q. Now who was the captain of that Merchant in 1887 and '88 when you were on it?
A. William Osborne was the owner and captain.
Q. The fat man that used to have a yard there on Minnesota Point, quite a fat fellow with whiskers?
A. Yes, Van Dyke whiskers.
Q. There wasn't much Van Dyke. They grew every place they could grow.
A. No, of late years he kind of kept them mowed down a little.
Q. Well, now, the Maggie Carroll and the Merchant were the two boats that you ran up there on, as I understand it, in 1887 or '88 or prior to '91?
A. Yes, sir.
Q. Those were light draught boats, weren't they?
A. About six feet.
1141 Q. Well, did they draw six feet?
A. Yes, they drew six all right, the Merchant did. I think the Carroll drew about the same. I don't know just what she drew.
Q. And the scows on which you hauled that sandstone would measure about 3 feet to three and a half feet from top to bottom?
A. Well, I never measured one of them scows. As a matter of fact I don't know.

Q. Well, they wouldn't be much more than that, one of those scows?

A. Well, three foot to three and a half foot scow is a pretty shallow scow. I wouldn't care to commit myself on the depth of those scows because I would be talking about something I know absolutely nothing about, the depth of them.

Q. Well, they didn't draw as much water as your tugs, did they, when they were loaded?

A. No. About pretty near it, I should think.

Q. They were flat bottom?

A. Flat bottom.

Q. Now what about the James Bardon?

A. She drew about seven feet, six and a half or seven feet.

Q. Just about the same as the Merchant?

A. A little more, she was a little larger.

Q. Who were the Jeffrey Brothers, what were their names?

A. Sime and Bill were the ones that were running the tugs Jeffrey and Gillette and Temple.

Q. Was Jack a member of that firm?

A. Well, he was before I worked for them. It was formerly—Jack was in it—Sime and Jack were the managing owners,
1142 and then Jack, I understand, sold his interest to Bill.

Q. Now, you say you never went up and down the St. Louis Bay or river above Grassy Point until after the rushes came up so you could see them?

A. No, sir.

Q. What time of year did they come up so you could see them?

A. Oh, along about the middle of June or any time—well, you could see them probably from the 5th to the 10th of June if it was a good clear day and no disturbance on the water, you could just probably see the ends of them along about the 15th of June, they would probably be out an inch or so so you could see them.

Q. Now, I want you to come down and look at this map, Minnesota Exhibit 1. Now, I will call your attention to this line marked A-G-B-C. Now, did you ever go up that channel in going up the river?

A. What is this mark here?

Q. B and C.

A. What is this mark here?

Q. A. Here is Grassy Point.

A. Yes, from A to B I have. That is northeast of that little island, isn't it?

Q. Yes. And did you ever go up from B to C?

A. No, sir.

Q. You never knew of anybody going there, did you?

A. No, I never did. I never see any one go through there, not unless—no, not unless it was gasoline boats since then, in the last five or six years I have seen gasoline boats go across from the end of this island across in there into the new channel. The new channel comes along there and cuts a big chunk of that off.

Q. Well, the new channel doesn't run very much differ-
1143 ently from this line from G to B and B to C, does it, not very much difference?

A. The new channel goes right straight along here, right up here. Where is the brick yard? There is the brick yard. You go up to the first point and then there is two ranges back in here, one here and one there, that you used until you opened the old channel looking into the brick yard. That is the new channel I have never seen anything go across except gasoline boats of late years.

Q. Now, isn't it a fact that all times there was open water and no bulrushes from B to C as long as you have known that?

A. Where is that?

Q. From B to C, and G to B, and C to A.

A. That is the little island?

Q. Yes.

A. And that is the old channel over there?

Q. Yes.

A. There was always bulrushes there ever since I can remember, along over here along this here bank.

Q. I am not asking about that. Please pay attention to what I say. I am asking you whether or not this red line from B to C and from B to G was not always open water and no bulrushes?

A. B to G was always open water.

Q. Wasn't B to C always open water northerly of this little Snowshoe Island?

A. The north side of it, yes, but I understood you to say out from B to C.

Q. That is what I am asking.

A. Why, absolutely no, because there was bulrushes out on this port channel.

Q. From the line marked B to C, this red line running northerly of Snowshoe Island?

A. Along Pie Island.

Q. To the north of the island?

1144 A. On the south bank of the old channel.

Q. Now, then, the bulrushes as I understand it, we will take this channel marked on this chart H in red, you call that the old channel?

A. Yes, sir.

Q. On the southerly side of that channel were bulrushes, weren't there?

A. Yes, sir.

Q. All along the bank?

A. Yes, sir.

Q. Then those bulrushes didn't extend from the southerly bank of what you call that old channel over to this little island called Snowshoe Island, but the rushes extended part way over making a field running from G to C in the shape of a half moon that was all rushes, isn't that true?

A. Why, I have no means of knowing what the rushes look like. I don't know if it was the shape of a half moon.

Q. Wasn't there a strip of open water from G around through the channel marked H clear up to point C?

A. Yes, sir.

Q. And wasn't there a strip of water running all the way from G to B and B to C north of that island?

A. Not to the best of my recollection, no.

Q. Then do you want to change your testimony that there was no open water from B to C just to the north of that Snowshoe Island?

A. Oh, yes, there was open water there but not where you have that C. That was rushes.

Q. C is right in what you call the old channel.

A. Right on that bank I am speaking of, the port bank.

Q. Then you mean to say there were rushes continuously
1145 on the bank of this channel that you call the old channel, channel H at the point C?

A. Yes, to the best of my recollection there was.

Q. That was a good many years ago, wasn't it?

A. That was 1888.

Q. 1888?

A. Yes, sir.

Q. Well, do you feel at all sure about that that this wasn't open water from B to C?

A. It was open water from B to C but at C there were bulrushes as I recollect.

Q. How thick were those bulrushes?

A. There may be some places up the river where them rushes ain't very thick, maybe five or six growing together about eighteen inches wide, and then maybe again two hundred feet wide.

Q. Well, now, those boats you were using in 1888 they could go where the water was six and a half feet deep?

A. Yes, sir.

Q. Now, we will take Wisconsin Exhibit 1. Now, I want to call your attention to the black line running from the point marked D, and I will state that this line was put on there by Mr. Darling, the Government Engineer, indicating the point where he said the cut-off channel left the main channel westerly of Grassy Point. Do you recognize Grassy Point here, marked Grassy Point?

A. Yes, sir.

Q. You stated in your testimony that when you went in the cut-off instead of taking this black line you started at the red line here at the southerly end of Grassy Point.

A. Yes, sir.

Q. And went up in the direction toward the easterly point
1146 of Pan-Cake Island?

A. That is the little island off the Furnace, is it?

Q. Yes.

A. Yes, sir.

Q. Then you would say this black line from the point D is entirely wrong?

A. Oh, no; oh, no, absolutely no; because I didn't use that channel, I wouldn't criticise another man and say that he was wrong.

Q. Come back to this other plat. You say there was not a channel that could be used by boats along from A to B and B to G and G to C, that there wasn't a channel that could be used for boats drawing six to seven feet of water?

A. No, I am not saying there wasn't a channel that couldn't be used, I am simply telling you the channel that I used up there, because a man could probably go up there and he would probably go somewhere where I never went. I am telling you where I went.

Q. Now, I want to call your attention to this map marked Wisconsin Exhibit 46-C. You recognize this little island called Snowshoe Island by some, and you call it the little island opposite the Zenith Furnace Company. Now I want to call your attention to the soundings extending from the channel off Grassy Point off toward the island and running to the northerly of the island to where it joins what you call the main channel and at the point substantially marked C on the other map, Minnesota Exhibit 1. I want you to examine that and see if you don't find water that is less than seven feet deep at every point on that channel along that line, and if you find any shallower water than that you call
1147 my attention to it. Just examine it carefully.

A. No.

Q. You find not less than seven feet the entire distance, don't you?

A. Yes, sir.

Q. Now rushes don't grow in water that is seven feet, do they?

A. I don't know.

Q. You don't know anything about that?

A. I don't know what depth of water a rush wouldn't grow in or will grow in.

Q. Now if the water was not less than seven feet deep that entire channel from the point opposite Grassy Point up northerly of this little island to the point marked C on Exhibit 1, do you know any reason why you couldn't go through there with your boats?

A. Not at all, just simply didn't know there was a hole there, that is all.

Q. You simply didn't know it?

A. No.

Q. And wouldn't it be the best channel to take, the shorter channel to take with boats drawing six feet or less and with scows drawing six feet?

A. Yes, if we knew it was there, yes, sir.

Q. Well, now, as a matter of fact all you are giving us is the channel you and Osborne took at that time?

A. Yes, that is what I am giving you. That is what I learned.

Q. That is all you knew?

A. Yes, sir.

Q. Now to come back south of Big Island, there was just as heavy a current to the south of the island as there was any place, wasn't there, a current right around Big Island, Devil's Elbow?

A. Why, I don't think there is any difference to the current.

1148 Q. Now let me call your attention to this. When was the St. Paul & Duluth bridge built?

A. I don't know.

Q. About when was it built?

A. I couldn't say.

Q. When was the dredging above Grassy Point first done by the United States government?

A. Why, I have no recollection of that. I don't think they were in there, I don't remember of seeing a dredge up above that point until after they started that new channel, along about 1900 or 1901 or '02, along there.

Q. Well, the main channel was dredged from 1900 to 1902, wasn't it?

A. Along about that.

Q. Prior to that time you never knew of any dredging being done?

A. No, sir.

Q. Never saw a dredge up there?

A. No, sir.

Q. And never heard of it prior to that time?

A. No, sir.

Q. Now did you ever know or hear that there was a bar in the channel just northerly of the point marked C on Minnesota Exhibit 1?

A. No.

Q. Never knew of any bar there?

A. No.

Q. Never heard there was a bar there?

A. No.

Q. You never struck bottom there at all?

A. No.

Q. Never heard of anybody striking bottom there in 1887 or '88?

A. No, sir.

Q. You never knew that was dredged out at any time?

A. No, sir.

By Mr. Hanitch:

Q. I will show Wisconsin Exhibit 1 and ask you to locate the furnace on the red line as nearly as you can, the Furnace

1149 Company dock?

A. Where is that little island? This is it here, isn't it?

Q. Yes.

Mr. Hanitch: Witness has marked on Wisconsin Exhibit 1 a place on the main shore with a plus sign with a circle around it, with a lead pencil.

(Ten minutes recess was here taken.)

1150 A. E. BISHOFF, called as a witness by the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live?
A. Superior.
Q. How long have you lived in Superior?
A. Since 1857.
Q. How old are you?
A. I will be sixty this fall.
Q. Born in Superior?
A. Yes, sir.
Q. You have always lived in Superior, then, have you?
A. Most of the time, yes, sir.
Q. Have you been away some of the time?
A. Well, there was, when I was a little tot, the folks were away a short time.
Q. You live at what is called the East End?
A. Yes, sir.
Q. What is your business?
A. Engineer.
Q. What kind of an engineer?
A. Well, in the early days I used to be steamboat engineer, marine engineer. Nowadays I am stationary, hydraulic.
Q. Have you ever run on boats any?
A. Yes, sir.
Q. What was your first experience on a boat?
A. Well, I first started out, in the early days I went cooking on a steamer called the Lottie Bernard, side-wheel steamer.
Q. How long did you run on the Lottie Bernard?
A. I just put in four trips on her down the lake and back.
Q. Where was the Lottie Bernard running?
A. She ran on Lake Superior, Houghton, Ontonagon and Port Arthur, and over to Isle Royale.

1151 Q. Have you had any experience on the St. Louis River?
A. Yes, sir.
Q. When was your first experience up the St. Louis?
A. I used to go up there a good deal when I was a boy.
Q. How did you go up?
A. We used to go up in a row boat.
Q. How early?
A. That would be in the early '70's.
Q. What did you do up the river there in the early days?
A. We used to go up there hunting and fishing. I used to go over to Milford. That is what was known as the Burg farm then, used to go over there and stay with the boys.
Q. And that was in a row boat?
A. Yes, sir.

Q. How long did you go over the waters there with a row boat before you had any experience with steamboats?

A. Oh, it must have been a number of years. I couldn't say exactly.

Q. Were you up there a great deal?

A. Yes, quite often. Well, every summer I was up there dozens of times.

Q. That is in the '70's, would that be?

A. Yes, sir.

Q. Then when did you first run up the river on a steamboat?

A. Well, the first time I went up there with any boat of a size was in '81.

Q. What boat was that?

A. The tug F. L. Danforth.

Q. In what capacity were you on the Danforth?

A. I was engineer.

Q. Who was running the Danforth, do you remember?

A. James Sullivan.

Q. And did you have anything to do with the channel and the course?

1152 A. Well, I in fact piloted him because he was a stranger at the time.

Q. He didn't know the channel?

A. No, sir, he wasn't acquainted with it, he had never been up there.

Q. Where did he come from?

A. Houghton.

Q. And you went up there with him his first trip up, did you?

A. Yes, sir.

Q. And you piloted him up, you say?

A. Yes, sir.

Q. How long did you run on the Danforth up the river?

A. Oh, we just made three or four trips up there.

Q. How far up the river did you go?

A. Went up beyond Big Island, over Devil's Elbow.

Q. What did you go for?

A. We went to swing a boom across the short cut for A. M. Miller.

Q. Now then that all made you familiar with the channel of the river?

A. Yes, sir.

Q. How did you become — with the channel of the river?

A. Oh, we used to go up there occasionally, quite often during summer, fishing and hunting.

Q. When you went up there you were up in the vicinity of Milford with your row boat did you sometimes come down the channel?

A. Yes, sir.

Q. When did you come down the channel?

A. Well, in case of a northeast wind. It always gave us shelter there under the lee of the Minnesota shore.

Q. And you would take the main channel coming home?

A. Yes, sir.

Q. Going up I suppose you could run anywhere?
1153 A. Well, if it wasn't too windy we would go across anywhere.
Q. But if there was a northeaster on coming home you would take the channel?
A. Yes, sir.
Q. Along by Grassy Point?
A. Along by Grassy Point.
Q. Was there a well-defined channel there between Milford and Grassy Point?
A. Yes, sir.
Q. Where was that channel?
A. It was close to the Minnesota shore.
Q. Does the Zenith Furnace Company dock extend out over part of it now?
A. Well, it does now but there was no Zenith furnace dock them days.
Q. And does the Carnegie coal dock extend out over part of it?
A. Yes, sir.
Q. Now, which channel did you direct Mr. Sullivan on the Danforth?
A. The main river channel.
Q. That is the one you have described that extends close to the Minnesota shore?
A. Yes, sir.
Q. And over which these docks now extend?
A. Yes, sir.
Q. Do you know anything about the character of the water there, the depth of it in the channel?
A. There was all kinds of water in the river channel, you would have all the way from eighteen to thirty, thirty-five and thirty-seven feet some places.
Q. Did you ever pole it?
A. Why, we poled it generally, that is, when we first went up, sounded with the lead line so as to make sure we were in the channel.
Q. When was that?
A. When we went up with Mr. Sullivan, the first time,
1154 took him up there.
Q. And you made about three or four trips with the Danforth?
A. Three or four trips we went up there.
Q. And were all of them in the main channel, what you have described as the main channel?
A. Yes, we couldn't go the short cut.
Q. Was there a cut-off channel?
A. Well, that is south of Big Island there was.
Q. Did boats take that course to some extent?
A. Shallow-water boats used to.
Q. Well, what other boats have you gone up on?
A. Used to go up on the Nellie Cotton.
Q. When?

A. That was in '82.

Q. How often were you up on the Nellie Cotton?

A. Why, I believe there was only once or twice we went above the island. We used to go over to where the boom was and take the boom sticks or bring some logs down. That was outside of the main channel, you understand. We used to drag along through there, we could pound along there on six feet.

Q. Where was that?

A. That was—well, west of the main channel.

Q. At what point?

A. Well, we used to start out from Grassy Point and cut across instead of going up around the main river, we used to cut across. There was some piling driven in there, in a sluiceway.

Q. Where was the piling driven?

A. I think it was what they call Snowshoe Island or up in beyond there.

1155 Q. What is a sluiceway?

A. Well, they had piling driven there and boom sticks to sort the logs there, sorted them through into the main boom so they could raft them.

Q. That is, they sorted different owners' logs?

A. Yes, sir.

Q. Put the different logs in the water together and then sort them?

A. Yes, sir.

Q. And that is what you mean by a sluiceway?

A. Yes, sir.

Q. Where was that located?

A. That was up there near the main channel just as you go around the point, going towards Milford, that was up in there.

Q. Well, was it on the Minnesota or Wisconsin side of the main channel?

A. Well, that was on the Wisconsin side.

Q. What direction from that Snowshoe Island was it?

A. Oh, that was about west, I should judge.

Q. How long was that sluiceway there?

A. Why, I don't remember how long it was there. They took away them logs that summer, and the piling, I presume, was there for a while afterwards until the ice lifted them.

Q. Now going up after those logs then, did you just go up to this sluiceway?

A. Yes, sir.

Q. You didn't go up above Big Island?

A. No, sir.

Q. Now what other experience have you had on St. Louis River above Grassy Point?

A. Well, I went up there in '83 with a small tug. I took up a couple of empty scows and brought down a scow loaded with rock from Fond du Lac but they were small scows and I come through the short cut and the reason I come through the short cut

1156 there was a dredge and tug ahead of me that had come ahead through the upper end into Spirit Lake and a man by the

name of Walter Burns sailed the tug, and I took the short cut and come down and I missed it on the inside and I swung on the bank and run the scow on the bottom and I had to wait until the dredge come around Big Island in the main channel and they come over to me and towed me off. That was the only experiences that I had up the river. Of course I went up with excursion boats of late years.

Q. How early did you go up on excursion boats?

A. Oh, I think about ten or twelve years ago was the latest I have been up, or the earliest I mean since the excursion boats have been running.

Q. Did you find a current in the main channel of the river?

A. Yes, sir.

Q. Very much of a current?

A. Quite a current in the main channel.

Q. Where was the principal current?

A. Why, that followed the main shore, used to come across and strike on Big Island there and then she crossed and hit the Minnesota side all the way along until it come out at Grassy Point.

Q. Followed the main channel, did it?

A. Yes, sir. There was some current there at the cut-off but nothing in comparison with the main channel.

Q. That is coming around Devil's Elbow, you mean?

A. Yes, sir.

Q. You were up the river a week ago Monday, were you?

A. Yes, sir.

Q. With a party that went up to refresh their memories?

1157 A. Yes, I was up there.

Cross-examination.

By Mr. Hanitch:

Q. Mr. Bishoff, how long have you been a stationary engineer?

A. Twenty-seven years.

Q. So you haven't been on boats as an engineer since 1890?

A. No, sir.

Q. How long were you a marine engineer?

A. Let me see. Oh, I can't say just exactly, but it was twenty-seven years ago this spring that I went to work for the Water Light & Power Company and I sailed up until then.

Q. That is you sailed on the lake up to that time?

A. Yes, sir.

Q. What waters of the lake did you sail?

A. I sailed on Lake Superior and through the bays here, St. Louis River.

Q. What other boats than the Danforth and the Lottie Bernard did you work on that went up the river?

A. Well, practically none at that time, that I was on.

Q. Well, the last trip as I understand you, up the river, was in 1880?

A. 1883.

Q. What boat were you on?
A. The Minnie LeMont, I took her up. My brother was sailing here and I took her up to get the scows because he was sick.
Q. You only made one trip in 1883?
A. That was all.
Q. That was the trip you used the cut-off?
A. Yes, sir.
Q. Going up and coming down?
A. Yes, sir.
Q. You got stuck coming down?
A. Yes, I got stuck.
1158 Q. How much water did that boat draw?
A. About three and a half feet.
Q. How much did the scow draw?
A. Well, the scow probably drew four feet.
Q. You say you swung on the bank, what bank do you refer to?
A. Well, all through there, there is what they call hob-backs. The scow was clear but I ran the tug on.
Q. Was that at the Devil's Elbow that you ran the scow on?
A. No, sir, that was down here this side of Pokegama Bay, I should judge it was within about 400 feet of the main channel coming around Grassy Point.
Q. I think you said your first trip up the river on a boat propelled by steam, or, that is, a boat other than row boats, was in 1881?
A. Yes, sir.
Q. That was the Danforth?
A. Yes, that is of any size boat.
Q. And that trip you say you piloted the boat?
A. Yes, I was acting as pilot. Of course I was engineer on the boat.
Q. Well, why did you use lead lines if you knew the channel?
A. I wanted to make sure.
Q. You weren't sure in your own mind just where the channel was?
A. I knew where the channel was but it was so crooked that you were liable to run on to a hog-back or something, and I wanted to make sure.
Q. How far up did you go that time?
A. A little above Devil's Elbow.
Q. Did you go north or south of the island?
A. North, we couldn't go south of the island.
1159 Q. How much water did the Danforth draw?
A. Little better than seven feet.
Q. Did you get stuck going on that trip?
A. No, sir.
Q. Moved very slowly, did you?
A. We went slow until we got up around the other side of Milford, and then there was no more danger after we got up that far.
Q. After you got up beyond Milford it was safe?
A. There was all kinds of water up there.

Q. But it was between where you passed Grassy Point and Milford that you had to be careful?

A. That we weren't sure of, had to be careful.

Q. What part of 1881 was it?

A. That was in the summer, some time in August.

Q. And in August you say you weren't certain of that channel without using a lead line?

A. We used the lead line for safety, yes, sir.

Q. Now then, in 1882, what boat were you on?

A. The Nellie Cotton.

Q. Did you make any other trips on the Danforth that summer?

A. I went up there probably three or four times. I wouldn't be certain.

Q. But you didn't make any regular trips up there?

A. No, we just went up on special occasions.

Q. Up after rafts?

A. Raft or boom.

Q. Now, in 1882, what boat were you on?

A. Nellie Cotton.

Q. And how many trips did you make up the river that time?

A. Oh, we made a number of trips. I wouldn't say how many.

1160 Q. The Nellie Cotton was a light draught?

A. Yes, she drew about six feet.

Q. And what did you do with her when you went up?

A. Went up with boom sticks and brought rafts down, that is, from south or below the Big Island.

Q. Do you mean you got rafts out of Pokegama?

A. No, sir, over on the Minnesota shore where they came down the river. They had that boom there and they were running them through this sluiceway.

Q. How far did you go up there, up as far as this Snowshoe Island?

A. Well, there was some little island there, I think it was Snowshoe, but it was south of Milford.

Q. About midway between Milford and the Wisconsin shore, would you say?

A. No, it was pretty well over because the main channel was on the north of that island.

Q. How close to the island was the main channel?

A. Well, I wouldn't say just how close, fairly close.

Q. What is your judgment, a hundred feet?

A. It may be. I wouldn't be positive.

Q. But it wasn't far?

A. It wasn't far.

Q. And you say you went that far and took the logs and——

A. And brought them back to the mill.

Q. Now, was there a good deal of clear water in that upper bay during that season, do you know?

A. Well, there was open water there, yes, shallow.

1161 Q. Had you ever studied the charts to see what the depth of water was around there?

A. No, sir. The only time I looked over the charts to size up the river was previous to the time they put that bridge across the entry—or from Connor's Point to Rice's Point. I was working for the N. P. people at the time, on the survey.

Q. On the survey?

A. Yes, sir.

Q. That is the only time you examined the charts?

A. Yes, sir.

Q. On your trip didn't you examine a chart?

A. Why, we had a chart there, was looking at it, discussing the lay of the land, that was all.

Q. You had Wisconsin Exhibit 1, didn't you?

A. I don't remember which it was. Well, it wasn't that chart. I don't think that was the one.

Q. You don't think it was this?

A. No, sir, I think that was colored.

Q. The one you had was colored?

A. No, Mr. Powell had that chart, he had a chart similar to that, but there was another channel marked on it.

Q. There was a channel marked on the other?

A. Yes, it seems to me there was a channel marked across.

Q. How was the channel marked, in red ink, the one he had?

A. Why, I don't remember now. It seems to me there was a black mark around across it where I claimed we went after the logs to that sluiceway.

Q. But between the time that the N. P. bridge was built from Rice's to Connor's Point, from that time up until Monday

1162 you had not examined any chart of the bay?

A. No, sir. Well, I will take that back because two or three years ago I had been running around a good deal with a gasoline launch belonging to the company, and it was something like three years ago we were discussing the dike and we had a chart.

Q. Chart of Superior Bay?

A. Well, it had Superior Bay and St. Louis and all.

Q. But you didn't examine the soundings then up in upper St. Louis Bay?

A. No, sir.

Q. Now, you never had a pilot's license, did you?

A. No, sir.

Q. And the license you had was simply a marine engineer?

A. Marine engineer.

Q. And that you had for about three years as I understand?

A. Oh, longer than that.

Q. But your experience up the river was confined to one or two trips in 1881 and a few trips in 1882 and one trip in 1883, is that right?

A. Yes, sir, that is with boats of any size.

Q. The others were with row boats?

A. Row boats or small little boats.

1163 DAVID N. MORRISON, called as a witness by the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live?
A. At the present time I am living 332 Baxter Avenue.
Q. In the city of Superior?
A. Yes, sir.
Q. How long have you lived in Superior?
A. I don't know that I would be able to tell within a year but I think thirty years.
Q. What is your business?
A. Now I am manager of a hotel.
Q. What hotel?
A. Sweitzer.
Q. What experience have you had on the water at the head of the lakes?
A. In all my life?
Q. Yes.
A. Well, I bas born in a lighthouse and brought up——
Q. Lighthouse, what lighthouse?
A. Fort William lighthouse, Ontario.
Q. Fort William, Ontario?
A. Yes, sir.
Q. What experience have you had on boats around the head of the lake?
A. Oh, I suppose me being born in a lighthouse made me take to boats. I have been around boats all my life.
Q. To what extent have you been up the St. Louis River above Grassy Point?
A. Oh, I don't know, I have been up there a thousand times, probably.
Q. When did you first go up the St. Louis River?
A. Oh, 1885, '86, or '7 along in there.
Q. What took you up the St. Louis River at that time?
1164 A. Hunting, fishing, camping, and carousing around. Every summer I would be up there.
Q. Have you been up the river on a boat or boats?
A. Well, after I got acquainted up there and got older I managed a boat, an excursion boat. When I got her she was known as the Bloomer Girl——
Q. What boat?
A. She was known as the Bloomer Girl but I changed her name to the Silver Spray. I didn't like the other name.
Q. And when was that?
A. 1900 and '01 and '02. I forget just what date we started.
Q. You first managed the boat in 1900?

A. 1900.
Q. What were you doing?
A. Carried excursions, lodges, churches and private parties, anything I could get to do.
Q. Running up the river?
A. Yes, sir, to Fond du Lac.
Q. From where?
A. Duluth and Superior.
Q. You say you were managing the boat?
A. Yes, sir.
Q. Did you run on the boat yourself part of the time?
A. I probably made two-thirds of the trips on her.
Q. Is that your best judgment, that you made two-thirds of the trips?
A. I should imagine so, yes, sir.
Q. Did you have anything to do with operating the boat?
A. The old gentleman that owned the boat was sailing her, he was an old man about seventy-three, seventy-four or seventy-five years old, and he was what we call an outside man, lake captain, and me knowing the harbor here as well as I did I taught him all
1165 there was to be taught inside of Minnesota Point.
Q. Did you teach him the channel up the river?
A. Everything there was, yes, sir.
Q. And that was in the summer of 1890?
A. No, sir, that was the spring of 1900.
Q. Now, had you had any experience before that time up the river in boats?
A. Why, not as a manager or sailor, anything of that kind, more than for my own pleasure, such as sail boat or yacht and launches or swimming, or camping, something like that.
Q. What course did this boat take in running up the river after she rounded Grassy Point?
A. After we rounded Grassy Point I took what was called the natural river, that is running the hills of the Minnesota side pretty close.
Q. Was it usually known as the Minnesota channel?

By Mr. Bailey:

Q. You are speaking of the Silver Spray?
A. Well, it was the Bloomer Girl at first and then I changed her name after a couple of years and called her the Silver Spray.

By Mr. Gard:

Q. Have there been docks built out over that channel since that time?
A. Oh, yes, sure.
Q. What docks?
A. That first one I guess is the Carnegie dock going up. The next one I don't know what it is.

Q. Two built out over it?
A. Yes, sir.
Q. Built out over the channel that you took?
A. No, part of it.
Q. You told me about a man drowning up the river off your boat, didn't you?
A. Yes, I lost a man once.
1166 Q. Where was that?
A. Have you got a chart here, the old chart?
Q. Just tell me where it was.
A. Well, after you pass the cut-off into the Devil's Elbow there is a long weedy,—I guess it is a kind of an island until you get up a mile and a half. We lost him about imdway up, about midway on Spirit Island, Spirit Lake.
Q. Were you able to find him at that time?
A. No, I went after him myself off the boat into probably ten or twelve feet of water when we went down but I couldn't get him. That was on Sunday and we found him the following Friday.
Q. Where did you find him?
A. I judge about six miles down the river off Grassy Point.
Q. On the Minnesota shore?
A. Yes, sir.
Q. Washed down?
A. Apparently took the main current down, followed the natural course. That was the only place we looked for him.
Q. About where with reference to the Zenith Furnace Company?
A. We must have picked him just about where the Zenith Furnace Company is now.
Q. On the Minnesota shore?
A. Yes, sir.
Q. Now did the boat take what you call the main channel going to and from Fond du Lac all the time?
A. Always except once.
Q. Well, where did it run once different from that?
A. Well, when I first went on her they asked me why I didn't take the short cut and I said where is the short cut and they said
1167 up through the Devil's Elbow, but I didn't imagine there was any channel there big enough and they wanted me to try it, one of them was Captain Dune Clow,—let me see was it Dune or Harvey, I guess it was Dune, and the other was Captain Johnny Cameron. He was considered the best inside man we had——
Q. Now tell just what you did.
A. They coaxed me for several days to take the cut-off, they used to ride around, you know, different fellows, on the boat, and when they had time they would come with us because I had the only excursion boat there was and so I told Captain Clow and Cameron if they would come up with me some day when I wasn't busy I would try the cut-off, so I called them up one day and told them I would gladly go up with the boat and try the cut-off and we did. We went into the cut-off three or four lengths of the boat and we hung up and took three tugs the rest of the day to pull us off.

Q. Where was that?
A. A little east of where you turn in. That would be a little east of Grassy Point.
Q. What direction from the main channel?
A. Where we turned in?
Q. Where you got stuck.
A. Oh, it would be heading due south, pretty close to due south.
Q. You had been in the cut-off in small boats?
A. Oh, many times.
Q. That course is very often taken in small boats, is it?
A. I guess all the little fellows used the cut through there as near as I could remember.
Q. Where did the larger boats travel when you were on them?
1168 A. Well, what we call the regular river, the main channel, following the Minnesota hills pretty close. We used to go up as far as—I could show you on the chart there.
Q. I show you Wisconsin Exhibit 1 and ask you to indicate what course you took with your excursion boat after you rounded Grassy Point. This is Grassy Point.
A. May I put that on the table. I have only got one eye. I lost one a couple of years ago.
Q. Here is Grassy Point. Here is Big Island.
A. Show me where the St. Paul & Duluth bridge is.
Q. The St. Paul & Duluth bridge is in the location of my pencil on the map, across from the Wisconsin shore to Grassy Point.
A. I can't get the run of that. Is this the only one you have of this?
Q. Well, they are all the same.
A. Now, the Zenith Furnace Company, I have got that right here but if I can get exactly where the St. Paul & Duluth bridge was I can show you the course we used to take. Well, now I will trace it out. The St. Paul & Duluth bridge ought to be in there, shouldn't it, right across there.
Q. No, it goes across from Grassy Point.
A. Is this the main channel here, is this the main river here?
Q. It looks like it. Now if you cannot locate this on this map, don't attempt it.
A. I am not going to do it. There has been some drawings on this that has got me puzzled. If there was nothing on there at all and I had a regular chart I could show you exactly how we go up. Have you got a regular chart.
1169 Q. You mean a chart with the—what kind of a chart do you mean?
A. Well, if you have some that ain't got no drawings on at all.
Q. Yes, I can get you the Meade chart.

Mr. Hanitch: The witness is now examining and talking about Wisconsin Exhibit 1, is he not?
Mr. Gard: Yes.

Witness: I can't see that good enough to give you any testimony at all.

By Mr. Gard:

Q. You say you can't see it good enough?
A. No, sir.
Q. To follow your course?
A. No, I could take and draw it off better than that.
Q. Well, take a piece of paper and draw it out the—
A. Can I take this over to the light?
Q. Yes, take it over and examine it. (Witness examines Wisconsin Exhibit number 1 at the window.)
Q. Have you now located yourself on this map?
A. Yes, sir.
Q. Can you now indicate the course you took around Grassy Point with that boat?
A. Yes, sir.
Q. Indicate it.
A. Well, we used to go up just about like this, the St. Paul & Duluth bridge is somewhere around in here and we used to go here nearly to the west shore and then we used to throw her wheel hard astarboard and go around almost in a direct angle and we would head her around to what we call Grassy Point. Now I will explain that further. After we got well straightened up there was a
1170 little island to the left-hand side, I forget what they call it—
Q. Pan-Cake Island?
A. I guess so. Any way it was off about the middle of Grassy Point and we followed that course down here and we come down probably a thousand feet further and then give her a small turn to port, that is changing from a straight chain wheel——
Q. Well, then did you follow that red line?
A. Yes, we used to come down here until we come pretty close to the main line just about here. I should judge that is north.
Q. You are pointing now pretty close to where the Zenith Furnace is located.
A. The Zenith Furnace Company is up in here, isn't it? I don't know just where it is. That is where the old furnace used to be.
Q. That is the old furnace?
A. Well, that was down in here some place.
Q. Well, did you run to the Zenith Furnace Company's dock?
A. Well, I didn't pay much attention to the Zenith Company.
Q. Well, now, you have indicated, haven't you, that red line marked H?
A. Yes, I can follow that red line all right enough.
Q. And is that the course you took?
A. Yes, sir.

Cross-examination.

By Mr. Bailey:

Q. You say that when you rounded Grassy Point then you went up about opposite a little island?

A. When we rounded Grassy Point?

1171 Q. Yes.

A. Give me that again.

Q. I say, when you rounded Grassy Point, the southerly point, then you went about opposite a little island there?

A. After we got clear abreast of the point.

Q. After you got around the southerly end of Grassy Point there was a little island?

A. Yes, sir.

Q. And you went out close to that?

A. Well, we was close to the main shore and that island going through that cut-off.

Q. Well, did you take about a straight course northwest after you made the island?

A. Northwest? Well, there wasn't very much of a turn there after you turned again off Grassy Point going up the river, there wasn't much of a turn until you got further up.

Q. The time you are now speaking of is 1900?

A. Yes.

Q. That is the only time you were engaged in anything with a commercial boat?

A. Yes, for three years.

Q. Before that about the only experience you had up there was hunting or fishing?

A. Yes, sir.

Q. When you didn't pay much attention to channels?

A. Well, yes, you would pay considerable attention. I have been up with a sail boat.

Q. Where did you go with that sail boat?

A. If there was a northeast wind blowing you could go up the river in the main channel. If there was any other wind blowing you couldn't very well go up that way.

Q. There were other open spaces of water you could go in a sail boat?

A. Oh, yes, you could with small sail boats or canoes or

1172 row boats, open most places for small boats.

Q. Did you ever go up the cut-off with a sail boat?

A. Not with a sail boat.

Q. You remember particularly where you did go with a sail boat?

A. Yes, when I had my big sail boat the Louie she had a big steel centerboard, we had to take the regular channel in order to get that through. A good many people in Superior know that boat.

Q. When was that you had it?

A. That would be two or three years before I began sailing on the Bloomer Girl, that would be 1887 or '88.

Q. 1897?

A. No, sir, 1887 or 1888. There was a period that I was doing something else. I am a barber by trade. As I stated I was here nearly thirty years and I was doing different things in that time.

Q. Do I understand you to say that it was 1897 or '98 that you had this sail boat?

A. Yes. Not particularly that boat. I used to have several boats.

Q. Do you know whether there had been any dredging in what you call the main channel——

A. That was in 1900.

Q. You don't know if there had been any dredging before that?

A. No, sir. I think a while ago——

Q. You don't know anything about the dredging before 1900?

A. No, sir. I think the gentleman behind me told me——

Q. I am not asking what the gentleman behind you told you. I am asking if you knew.

A. No, sir.

1173 Q. Now you spoke of some fellow falling overboard in Spirit Lake.

A. Yes, sir.

Q. But you didn't find the body until you got away down here in the lower bay?

A. Found him off Grassy Point.

Q. Now what do you know about his body following the main current? You were very careful to mention that it followed the main channel.

A. Well, I know we dragged for a long time coming down the main channel.

Q. You didn't find him in the main channel?

A. Yes, we did.

Q. But you didn't find him in the main channel between Fond du Lac and Grassy Point?

A. We found him off Grassy Point on the left-hand side coming down the river.

Q. On the Wisconsin side?

A. No, sir, on the Minnesota side.

Q. What point, towards this end?

A. Well, off Grassy Point right about in where the Carnegie dock is now.

Q. You spoke about six miles down.

A. I should imagine it would be about that.

By Mr. Hanitch:

Q. When did that fellow fall overboard, what year was that?

A. I rather think it was the year 1902. I can't tell exactly about that. You will find the record of it in the life-saving station at Duluth because they helped us drag for the man.

Q. Now you ran the Silver Spray in 1900, 1901, 1902 and '03?

A. Not very long in 1903. We sold her in the spring of 1903.

Q. And when you went up these waters you always used the same channel?

A. Yes, sir.

1174 Q. During those years?

A. Yes, sir.

Q. Never changed except that time that you tried to make the cut-off?

A. That is the only time we ever got off the main channel.

Q. The main channel was just the same in 1903 as it was in 1900 when you started with the boat?

A. No, 1902 or '03, I don't know whether it was '02 or '03, that the dredges was working there and I give the City of Superior a gratis excursion one day and I wanted the engineer in charge of the work to take me down there, the new channel, so I took the City, Mr. Banks, the city engineer, and several of the city officials was with me so we stopped at the dredge that day and they brought me down so after that we always took the new channel.

Q. Now how far was the new channel from the old channel?

A. Well, I wouldn't like to say now.

Q. You could tell if you were up there?

A. Oh, yes, I could, yes, sir.

Q. But you couldn't say now?

A. No, I wouldn't like to.

Q. Now, how close to Pan-Cake Island did you run?

A. What do you call Pan-Cake Island?

Q. Well, that is the little island that you said you remembered.

A. The little island off the end of Grassy Point?

Q. No, it is a little island that lies out from the Zenith Furnace Company dock.

A. Well, now, I declare I don't remember much about the Zenith Furnace Company dock them days.

Q. You don't?

A. No.

1175 Q. I think you testified in your direct examination that after you went past Grassy Point and turned north or northwest you ran out to a little island, or past a little island.

A. No, I didn't testify to that, as you went up past Grassy Point. I said there was a little island off Grassy Point on the port side.

Q. On the port side?

A. Yes, going up. Starboard side coming down.

Q. About how close did you run to that island when you went up?

A. You are talking of the island off Grassy Point?

Q. Yes.

A. Well, that was the narrowest part of the entire river. I don't think there was room enough there for two big boats to get by.

Q. You think there was an island between Grassy Point and the Wisconsin main land?

A. There was and it is there yet.

Q. How near the St. Paul and Duluth bridge was it?

A. Oh, that would be a mile and a half to the southeast. I ain't

sure just exactly, I am not sure but I should imagine about that far, probably a couple of miles.

Q. Just look at Wisconsin Exhibit 1 and show us where that island was.

A. I should imagine just about in there. Well, I wouldn't want to be sure about that.

Q. Mark it with this pencil. (Witness examines chart at window and marks same.)

Q. Pointing to H on the red line, is that right?

1176 Mr. Fryberger: He pointed to the easterly of the red H on the red line.

The Witness: It is pretty hard for me to see. I can hardly read that fine stuff. This is Grassy Point here. I will change that, Mr. Gard.

(At this point the witness is asked to put a C with lead pencil at the point he now indicates.)

By Mr. Fryberger:

Q. It is at the most southerly point of the red line off Grassy Point, isn't it?

A. Yes, sir.

By Mr. Hanitch:

Q. Were there any other islands on that course near Grassy Point?

A. Yes, after you got up the river a little further, after you made another turn there was another island up there, I think it was called Fisherman's Island, on the left-hand side of the river going up.

Q. Was there any island near the first point that you have designated on this Wisconsin Exhibit 1?

A. Was there what?

Q. Was there an island near the first point which you have designated as the red letter H, was there an island there or in that vicinity.

A. No, only that little island that was off the end of Grassy Point.

Q. Well, but when you first examined this Wisconsin Exhibit 1 and were asked by me where the island was, you pointed to the letter H in red ink?

A. Yes, sir.

Q. Was there any island there or near there?

1177 A. Well, was that before I changed it or afterwards?

Q. That was before you changed it, that was the first point you located.

A. No, the island is where I pointed it off just now.

Q. There was no island in the vicinity of that letter H.

A. Not if I remember right in locating my sight of it on the chart there.

Q. Well, what about this chart, Mr. Morrison, do you see it very plainly?

A. No, sir, I don't. I can't hardly see anything.
Q. Well, now as a matter of fact you are not certain about these lines that you have made on this chart, are you?
A. Well, pretty sure, yes, sir.
Q. Are you as sure of the fact that there was no island near H as you are that the channel that you took is marked by the red line?
A. Am I as sure?
Q. Yes.
A. I don't know. I am pretty sure about the channel being where I showed you there but I ain't so positive about—if I was up the river I could show you better than I could on the chart because the thing is hard for my vision.
Q. But whatever island there was on that channel that you took was an island that was near the channel, is that right?
A. I was seeking to give you what I know out of my memory. You know you can ask me questions and I will try to remember it in place of referring to it on the chart.
(Question read by reporter.)
A. What island are you talking about, which island?
1178 Q. Well, you have testified that there was an island near Grassy Point, near this channel?
A. Right off the end of Grassy Point, the first island you come to, on the port side going up, was over there.
Q. And that island was near the channel that you took, was it?
A. Yes, very near. It was the narrowest part of the river.
Q. And is part of that island still there where the new channel is dug?
A. Where the new channel——
Q. That is, I mean the channel that was dredged in 1902.
A. It is still there, part of it.
Q. And that is the island that you ran close to when you went up the river?
A. That is the island we passed off our port bow going up the river, yes, sir.
Q. Well, now, you didn't run very close to it, did you?
A. We had to run very close to it because it was the narrowest part of the river.
Q. You wouldn't run within a hundred and fifty feet?
A. Yes, we run within forty feet.
Q. You are sure of that?
A. Yes, sir.
Q. And that is the channel you always took?
A. Yes, sir, positively.
Q. How long have you been managing the Sweitzer Hotel?
A. Three weeks Monday.
Q. What did you do just prior to that?
A. Had a pool hall in Allouez.
Q. How long did you run the pool hall?
1179 A. It would be two years the 12th of this October if I stayed there.
Q. Prior to that time what did you do?

A. Prior to that time I was manager of a Y. M. A. over at Fort William, Ontario.

Q. What is that?

A. An organization that the men have there to promote innocent amusement. Nothing to do with Y. M. C. A.

Q. Was that a moving picture show?

A. We had some moving pictures. We had all kinds of things. We had a park 600 feet square and we had a rolling rink and moving pictures and all kind of amusements.

Q. How long were you there?

A. Eight years.

Q. And prior to that time what did you do?

A. 1906, when did I go up there? I went up there in 1906. The year before I was—I am a barber by trade as you know and I had a shop in Old Town.

Q. In 1905?

A. Probably. 1904 I was manager on the Chequamegon out of Milwaukee, she was an excursion steamer.

Q. How long were you manager of that boat?

A. One season, 1904.

Q. Who is the owner of that?

A. Chequamegon Excursion Company. There was Mr. Rotherin, Mr. Cartier and Mr. Tarvox.

Q. Prior to 1900 what did you do?

A. In the wintertime I was in the barber shop and in the summertime I was with the Bloomer girl.

Q. Well, prior to 1900?

A. I was a barber.

Q. And had been running a barber shop practically all the time prior to 1900?

A. Yes,sir.

1180 Q. That is your business really?

A. That is really my trade.

Q. You had no interest in what you call that Blooming Girl?

A. Bloomer Girl?

Q. You had no interest in the Bloomer Girl?

A. Nothing more than manager, getting a salary.

By Mr. Fryberger:

Q. Now, I want to ask about that island off Grassy Point. Did you see that island the other day when you went up?

A. Yes, sir.

Q. You are sure of that?

A. Yes, sir.

Q. It was so close to the channel your boat passed through that two large boats couldn't pass at that place?

A. Well, I wouldn't like to tackle it with any passengers on.

Q. And that was the same island you saw when you first went up there?

A. I don't think there is any change in it.

Q. How long ago was it when you first went up?
A. Possibly 1887.
Q. And you saw the island of course every time you went up?
A. Well, after I got familiar I did, yes, sir.
Q. Well, as a matter of fact don't you know that island that you saw the other day is nothing more or less than the end of Grassy Point that was made by the government when it dredged this channel in 1902, simply dredged through the point and left the point as an island?
A. I see it as an island seventeen years ago.
Q. Well, don't you know that island was made in 1902
1181 when the government dredged their new channel through Grassy Point and separated that point from the main land?
A. Did I say that it wasn't.
Q. Why, certainly, you said you saw that island when you went up there the first time in the '80's.
A. Did I say the '80's?
Q. That is what you say.
A. Yes, and I will say 1887 and '88.
Q. Then you stick to what you said before?
A. Certainly.
Q. Well, now, I will ask you whether as a matter of fact the island was not made until 1900—1902, and it was made by the government dredging a channel through Grassy Point and leaving the end of the point as an island?
A. That is what you say.
Q. You don't know a thing about it as a matter of fact, you have not very much recollection of that situation at all, have you?
A. Yes, I have plenty.
Q. Well, now, do you think it possible that island had been there in '86 or '87?
A. I think so.
Q. Now, you say that when you didn't have much to do these pilots or captains wanted you to go up the cut-off once, do you recollect that?
A. Yes, sir.
Q. Captain Clow and who was the other?
A. Captain Johnny Cameron.
Q. They were the best pilots around the harbor?
A. I don't know that they were.
Q. You said they were.
A. I said they were known to me.
Q. And you said they wanted you to go up there?
A. They wanted to favor me by showing the cut-off.
1182 Q. Showing you a shorter cut than you used?
A. Yes, sir.
Q. And you didn't take much stock in that channel, did you?
A. No, no, sir.
Q. And when you started up there you got stuck?
A. I didn't take the boat. These men had her.
Q. And how much water did the boat draw?

A. She drawed less than seven feet.

Q. What did they give as their excuse for getting stuck in a channel that they as well as other boats all used?

A. I don't remember now.

Q. What did you say about their taking you up a channel claiming that was the best route and getting stuck?

A. I don't remember just what was said but I know they were very disappointed they couldn't get the big boat up there.

Q. They said that was the channel they used?

A. Yes, sir.

Q. And the one that was commonly used?

A. I don't know that they said that.

Q. Why did they want you to use it?

A. Because they was friends of mine and they thought they would save me fuel and mileage.

Q. Well, they got out of the channel, that was all?

A. Well, I don't know.

Q. How long were you a barber?

A. I started in 1885.

Q. What are you doing now?

A. Manager of the Sweitzer Hotel.

Q. Where is that?

A. Corner of Fourth and Banks.

Q. What kind of a hotel is that, laboring men's hotel?

A. Yes, sir.

1183 Q. Now you stated that Mr. Banks, the City Engineer, guided you through the new channel.

A. No, he did not.

Q. Didn't you say so?

A. No, sir.

Q. Didn't take some picnic through?

A. No, sir.

Q. Wasn't he with you when you went through?

A. Yes, sir.

Q. Didn't you say he showed you through?

A. No, sir.

Q. What did he do?

A. He was our guest.

Q. Did you have any talk with him about taking you through?

A. No, sir, only passed the time of day.

Q. And that was the only time you remember taking Mr. Banks up?

A. The only time.

Q. And you sold tickets for the excursion?

A. No, sir, I had a purser do that.

Q. You were supposed to be in the office?

A. Yes, when the boat wasn't busy I was in the office considerable.

Q. Did you ever go out in a boat and take any soundings?

A. No, sir, never did, never in a boat, because I couldn't——

Q. I didn't ask you whether you could, I asked you if you did.
A. No, sir, never did, never in a boat.

Court here adjourned until two o'clock P. M.

1184 THURSDAY, August 16, 1917.

JAMES BARDON was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follws:

Direct examination.

By Attorney-General Owen:

Q. Mr. Bardon, you are a resident of the City of Superior, Douglas County, Wisconsin?
A. Yes, sir.
Q. When did you first take up your residence in Superior?
A. Sixth day of July, 1857.
Q. What part of the City of Superior did you take up your residence in?
A. The part that is known today as the East End.
Q. How much of a settlement was there here at that time?
A. 1857, that was boom times. There was a considerable number of people here; estimated at a couple of thousand people.
Q. That is more than there were here a short time thereafter?
A. Yes, after the panic broke a great many went away in the fall of '57.
Q. How long was that after the townsite of Superior was first laid out?
A. That was three years afterwards. The townside was laid out in '54, platted in '54.
Q. Now you have lived here practically ever since that time?
A. Yes, sir.
Q. With the exception of when you were on a claim; did you have a claim or pre-emption?
A. I made a pre-emption, yes.

1185 Q. Where was that?
A. It was on the St. Louis River.
Q. On the Minnesota side?
A. On the Wisconsin side, the northwest quarter of section fourteen, town 48, range 15, fronting on the St. Louis River, about three miles below Fond du Lac.
Q. What has been your business since you have been here?
A. I have been engaged in many things. Farming, clearing land, lumbering, surveying, taught school for a time, published a newspaper, owned and operated a saw-mill, and a shingle mill in Superior, and held various county and city offices; that perhaps covers the scope.
Q. What offices have you held?
A. I was Clerk of the Circuit Court.

Q. How long?

A. Deputy clerk two years and clerk two years. County treasurer; Deputy clerk one term, deputy county clerk; chairman of the town and county board, and later a member of the county board, four of five years altogether, perhaps; school director, member of the first city council of Superior; that's about all the offices.

Q. Did you at any time do any work in or about the harbor?

A. Yes.

Q. What was the nature of it?

A. I was employed in the year 1867, summer of 1867, as one of a party making a survey by sounding and measurements, at the Superior entry, mouth of St. Louis River, and the work extending out into the water some distance on the Minnesota side; and I also on the Wisconsin side and into the bay preliminary to—that
1186 is, it was made for the purpose of making an estimate as to the cost of improving, as to the advisability and the cost of improving the entry, improve it for commerce.

Q. You say you were one of a party that engaged in that work?

A. Yes, sir.

Q. Who else was in the party?

A. Well, the gentleman in charge of the party was named Comstock, Captain Comstock, or Colonel Comstock. He was one of the United States engineers.

Q. Where was his headquarters?

A. I think his headquarters were at Detroit, and afterwards, if I mistake not, at the Soo station, in charge of the canal. He may be there yet for all I know. He was in charge, in immediate charge. There was three others, one man rowing a boat and one man steering it and keeping a record of the soundings; my part was throwing the lead and calling out the depth, was at it close to a month, perhaps longer; may be six weeks, every day every fair day.

Q. How far back into the river or Superior bay did you conduct those soundings, make those soundings?

A. Conducted it up the bay along the main channel about half a mile.

Q. Half a mile from the entry?

A. Half a mile from the entry.

Q. Or the mouth of the river?

A. Yes, sir. And into Allouez Bay a short distance, and out into the lake.

Q. In what part of the river did you make those soundings, clear across the expanse of water?

A. No; we followed the channel, channel as outlined by General Meade, General Meade's chart.

Q. You just simply sounded that channel for half a mile
1187 beyond the entry?

A. Yes.

Q. Do you know whether or not there is a channel that goes through what we call the bay of Superior?

A. There is a well-defined channel, I think, in the Bay of Superior.

Q. And that channel was there when you first came to Superior in 1857?

A. Yes, sir.

Q. What depth of water did you find in the Superior entry?

A. I think we found,—at that time it ranged may be seven to twelve feet; might have been a little deeper in some places, but it is deep enough to allow passage of boats, boats of considerable size.

Q. What depth did you find in the bay?

A. Well, up the bay, opposite the old light-house, we found 33 feet of water, a depth of 33 feet; that is the deepest water we found.

Q. What was the range? You say 33 was the deepest. What was the shallowest?

A. How do you mean, the range?

Q. With reference to the shallowest?

A. Twenty to 30 feet, I think, along the channel.

Q. Now, was there some shipping here in those days?

A. There was some. More shipping in an earlier day than '67. There was more shipping at an earlier day than '67, probably.

Q. I speak of those days, I mean when you first came to Superior?

A. Yes; there was a good deal of shipping. Many boats came and went, many large boats, passenger boats.

Q. How large?

A. I can't recall the length or capacity, but large steamers, lake steamers; Steamer Lady Elgin, a steamer that came here, a
1188 noted boat that was lost near Chicago; Steamer North Star; Steamer Illinois; Steamer Planet; and Steamer Keweenaw; boats that carried fine state-rooms and a fine table and carried passengers and freight; first-class passengers and deck passengers, so-called, and carried freight, and carried excursion parties; did a large and what you might call a booming business in '57 and '8.

Q. Have you made it part of your business, or did you in those days, to keep track of the commerce that came to the head of the lakes, or came to Superior?

A. Well, I did later; not so early as that.

Q. Later you did?

A. Later, in '78 and '9, and three or four years later.

Q. For what purpose?

A. I did it at the request of the United States engineers, the United States engineer who had charge of the harbors of Duluth and Superior; compiled and sent, prepared and sent him a statement every fall of the imports and exports and business of this port, in figures as well as I could make them up.

Q. From what data did you make up those figures?

A. General knowledge.

Q. Of what was coming in here at the head of the lakes?

A. What was coming in and what was going out. He wanted that as a basis for a recommendation for appropriation for the harbor, improvement of the harbor.

Q. Now, did your reports ever come to be a part of the public records?

A. Yes, sir; published by the Government.

1189 Q. Have you any reference with you?

A. I have some of them in pocket.

Q. Will you let me see them?

A. First one that I have is '79; '80, '81, '82, '83 is missing; '84.

Q. I show you copy of an Annual Report of the improvement of the harbor at Duluth, Minnesota, and of the entrance to Superior Bay, Lake Superior, and of the harbor at Grand Marais, Minnesota, under charge of Charles J. Allen, captain of engineers, Bvt. Major United States, being Appendix Y of the Annual Report of the Chief of Engineers for 1879, and ask you if your report made to Major Allen appears on Page 1470?

A. 1470.

Q. And was that report made pursuant to a request made of you by Major Allen?

A. It was.

Q. How was that request made?

A. By letter; by a letter, in this case. Do you wish me to read it?

Q. Have you the letter with you?

A. This is the letter right here.

Q. Just read that into the record, Mr. Bardon.

A. "St. Paul, April 9th, 1879. Mr. James Bardon, Superior City, Wisconsin. Sir: Can you oblige me by stating in general terms and in round numbers the estimated value of the trade and commerce of Superior City for the year 1878? Very respectfully, your obedient servant, Charles J. Allen, Captain of Engineers."

Q. You made some reports for what years?

A. Subsequent years, four or five years, always upon request from the engineer.

Q. Upon a special request such as this?

A. Yes, sir.

1190 Q. Where would these boats land that you have spoken of?

A. Quebec Pier.

Q. Where was that located?

A. Located where it is today. Daisy Mill is on one side of Quebec Pier.

Q. About how far from the Superior entrance?

A. From which?

Q. From the natural entry, or mouth of the St. Louis River?

A. About a mile.

Q. That is the only pier there was in the harbor here in those days, wasn't it?

A. Yes, sir; the only pier of any prominence, where large boats landed. There was some smaller piers where smaller boats landed. There was a pier opposite Central Park, an old pier at which smaller boats, smaller craft landed, ferry boats and such.

Q. How far is Central Park from the Superior entry?

A. It's about where L. Avenue is today, or a little above. That is, the pier was a little above where L. Avenue on the plat of Central Park.

Q. That is on the Bay of Superior?

A. On the Bay of Superior.

Q. About how far from the mouth of St. Louis River?

A. That would be about two miles.

Q. When were piers at which boats of size could make landings, built this side or northerly of Quebec Pier?

A. Those piers were built when I came here. Quebec Pier was and so was the other one. They must have been built in '55 or thereabouts.

Q. Well, and that is where boats landed in those days?

A. Yes, sir.

Q. But there came a time when they went on up further?

A. Well, there was a time when a pier was built on Rice's Point.

1191 Q. When was that built?

A. On the westerly side of the point up some little distance above the end of the point. That was built just before the St. Paul & Duluth road, the old Lake Superior and Mississippi it was called then, railroad was built; say about in '68 or 9, built by the railroad engineers, and a place where boats could land railroad supplies.

Q. After that did boats run up to that pier?

A. They ran to that pier, such as had business with the pier, business to go there.

Q. Did they have a usual and habitual course through the Bay of Superior?

A. They had. They called it the old channel.

Q. By the old channel you mean the channel indicated on Meade's map?

A. Yes, sir.

Q. You are familiar with Meade's map, are you?

A. Yes, somewhat.

Q. Do you know when the soundings for that map were made?

A. Made in 1860 and '61. I saw General Meade here making them.

Q. You saw him here making them?

A. Yes. He went from here to the Civil War, in to the war. He was sent for—an army officer.

Q. Did you form General Meade's acquaintance when he was here?

A. I used to see him. I don't know as I formed his acquaintance. I used to see him every day almost. He was on a little steamer with his party, little steamer called Search, with a party of surveyors.

Q. Now, have boats coming into the Superior entry, making for points up the river or up the bay habitually and continually followed that same channel from that time down to this?

A. Well, they followed that channel a distance of about
1192 two miles up the bay from the entry, which carried them some distance above a point opposite to the piers. Then they took a course from that in a southerly direction over towards the pier.

Q. You are speaking of Quebec Pier, are you, now?

A. Quebec Pier.

Q. I am speaking of when they were making for points up towards Rice's and Connors Points, they followed that channel along, did they?

A. Followed that channel; oh, yes.

Q. And that was their usual and habitual course?

A. It was.

Q. Now, what familiarity have you with the waters of the so-called St. Louis Bay, especially above Grassy Point?

A. Well, I knew these waters from having made frequent trips over them, on boats, on steamers, on scows, and on rafts, and in skiffs and so on. I had occasion to travel a good deal on the river while I was living up to the pre-emption laws, trying to; had a piece of land up the river. I went to Fond du Lac on the Steamer Seneca in the fall of '61 with a party, with Agent Webb, then Indian agent, making a payment to the Indians in the fall of '61. The Seneca was a boat that drew six or seven feet of water.

Q. When were you on your pre-emption claim?

A. In the late '60's; probably from '67 or '8 until I proved up in '72, '1 or '2.

Q. You spent considerable of your time up there?

A. Quite a portion of my time; cleared some land there, built a house, cleared some land and raised some crops.

Q. Where did you get your supplies?

A. In Superior.

Q. How did you get from your pre-emption claim to Superior?

1193 A. By boat ordinarily, by skiff.

Q. And that took you over the waters of the upper St. Louis Bay?

A. Every time, yes, sir.

Q. How often did you make the trip back and forth?

A. Oh, every season I would make the trip every month or two; sometimes oftener; sometimes sail-boats; sometimes row boats.

Q. Did you do any lumbering or logging up in that territory?

A. Yes.

Q. During what year?

A. I had a logging camp or two on the Pokegama and I purchased logs and timber from settlers and different people and got it from there up the river during a time I was operating a shingle mill and saw-mill down on the Bay of Superior.

Q. Where did you operate your shingle mill?

A. Shingle mill stood on the shore of the bay, at the foot of Nettleton Avenue in Superior; and the saw-mill stood on Connors Point right immediately opposite the barge works.

Q. Nettleton Avenue is near Quebec Pier?
A. Yes, sir.
Q. Now, what years did you operate those mills?
A. Well, I think from 1875 to '81, 1881, along there.
Q. You were operating one or both of them?
A. One or both; both of them at the same time part of the time.
Q. How did you get your logs down the bay?
A. They were towed by little steamers, little tugs, by tugs of all kinds; sometimes rafted and towed by individuals who cut them. They would sometimes tow a little raft down with a row boat.

Q. Were you in active supervision and management of
1194 this business at that time?

A. Oh, yes, yes; I owned the both mills and was actively looking after them, after the sail of the lumber and shingles.
Q. Did that take you up the waters of the St. Louis Bay frequently?
A. Oh, yes; had a camp, operated a camp, camps at different times on Pokegama Bay.
Q. And you were familiar with the manner in which those logs were brought down?
A. I was, yes, sir.
Q. All done under your supervision and direction?
A. Yes.
Q. Have you also been a member of the Harbor Commission in Superior?
A. Yes; two or three kinds of commissions about the harbor at different times.
Q. Were you a member of the commission that established dock lines?
A. Yes. I was a member of the County Board, and one of the members of the Board when the dock lines were established. The County Board established those dock lines first.
Q. Up the St. Louis River or bay, the St. Louis Bay?
A. Partially, yes; and on the Bay of Superior.
Q. Your work on that commission gave you a certain familiarity with those waters?
A. It certainly did.
Q. Now when you went up to Fond du Lac on the Steamer Seneca. What did the Seneca go up there for?
A. To carry the party that carried the Indian agent and the party of assistants with supplies to distribute among the Indians; blankets and clothing and materials, tools, axes and tools, to pay to the Indians, and some money, with some money.

1195 Q. That was in 1861?

A. 1861, yes.
Q. How large a boat was the Seneca?
A. I can't recall the size. She must have been a boat eighty feet long, perhaps.
Q. Eighty feet long?
A. I think she must have been.
Q. And drew how much water?

A. Six or seven feet of water, as near as I can recollect.

Q. Was that the first boat of that size that you knew of going up the river?

A. No, other boats; Steamer Manhattan is reputed to have gone up also. I have seen the Manhattan but didn't see her making that trip.

Q. What?

A. I have seen the Steamer Manhattan but wasn't familiar with her making that trip, but I have read that the Manhattan made that trip to Fond du Lac in an earlier day. The Manhattan drew more water, I think, than the Seneca. There was another boat named James Carson that made trips up the river to Fond du Lac, and along; she didn't draw quite so much water.

Q. What kind of a boat was the Carson?

A. A side wheel boat something like a Mississippi River boat, flat bottom.

Q. How large a boat?

A. I couldn't tell. She must have been fifty feet long, perhaps; quite a boat, a large boat, fifty or sixty feet long.

Q. You have seen that boat?

A. Oh, yes, I have been on that boat. I am the owner today, I think, of the hull of that boat. It is sunk in the bay.

Q. Do you know how much water that boat drew?

A. I think about four feet. She didn't draw as much water as the Seneca drew.

1196 Q. Do you know when it was that the Manhattan made her trip up there?

A. No, I don't know. I have read somewhere about the Manhattan. I may have some reference to it in my pocket. (Witness produces paper). This is a pamphlet published by Judge Carey of Duluth, entitled "History of St. Louis County. Duluth Historical and Scientific Association." He gives quite an account of boats on the river and the bays and around about. I am not sure that he speaks of the Manhattan. He obtained some of his information from me.

Q. I will ask you if you have some other historical pamphlet?

A. "Annals of the Early Protestant Churches of Superior, by Reverend John Morrison Burnett. Published by the State Historical Society." And he speaks of Superior in that early time, of boats and trips, and publishes a good deal in line with what we are seeking to find out.

Q. From what you have read of historical works have you an understanding of when the Manhattan first went up there?

A. I think it was about in '55. I think it was quite early. Manhattan—it's in some of these books, perhaps.

Q. Now, when you went up there on the Seneca, what route did you take; what course did you follow?

A. We followed deep water, I suppose, as well as they could find it in that bay. That was in '61, probably before the charts were published. They found their way up there. They went north of

the Big Island. The channel was fairly well known to the old-timers, I think, before Meade published his chart.

1197 Q. Did the people living in this vicinity at that time understand where the main channel of the St. Louis River was?

A. Oh, I think they did. They knew where the deepest water was.

Q. Above Grassy Point?

A. Of course they did going and coming in boats; they found out some way and used it.

Q. And there was a deep water course above Grassy Point that was actually referred to as the main channel?

A. Yes; yes. I guess it was the main channel if it was the deepest water.

Q. That is where the deepest water was?

A. Where the deepest water was.

Q. From your familiarity with those waters prior to the time you went up there with the Seneca did you know where that deep water course was?

A. No, I did not.

Q. Have you learned that since?

A. I have learned it since, coming and going, a great many times.

Q. Can you state now whether the Seneca followed that deep water course?

A. Oh, she must have followed it on account of her draft and her familiarity with the route. She was a boat that was running here regularly up and down. She was owned at Superior and made regular trips. She was a lake boat and she went across from Bayfield first. We went across from Bayfield to Grand Portage on the North Shore. After we finished the payment there we came along up the North Shore and then we came to Fond du Lac. She was a boat of considerable size and draft, built to go out into the lake; and then came in here and she had been here running as a ferry boat up and down the St. Louis River and over to Oneota and

1198 to Duluth, what there was of Duluth in that day.

Q. You couldn't describe the course that you took, particularly as she went around Grassy Point?

A. Oh, I couldn't, no, sir.

Q. But you do know that it went north?

A. I know she went up there anyway and I know she went around as all boats nearly, went around north of the Big Island.

Q. Do you know the course that boats usually took in going up St. Louis River?

A. I think I do.

Q. What course did they take?

A. They followed practically the course as outlined on Meade's chart. That is the best way I can describe it.

Q. The deep water channel as indicated on Meade's chart?

A. Yes, sir.

Q. Will you step here, Mr. Bardon. This is Wisconsin's Exhibit number one, supposed to be the Meade chart. Here is Grassy

Point. Can you indicate on that map the course the boats usually took in going up the river?

A. This is Millford, I think, over here, place they called Millford; saw-mill and flouring mill, first flouring mill at the head of the lakes; flour mill annex to a saw-mill; used to go up that way over towards Millford and around.

Q. You have indicated the channel marked by the red line?

A. Seems to be, yes.

Q. That is the channel that boats usually and customarily took?

A. So far as I know, yes. They would go around over that way and around the island was the way they found.

Q. Mr. Bardon, will you step here again. I call your
1199 attention to Minnesota's Exhibit 13, which purports to be a sectional map of the country around the head of Lake Superior showing the cities of Superior and Duluth, published by James Bardon, Superior, Wisconsin, and I will ask you if you prepared that map?

A. No, I did not prepare it. It was prepared by an engineer, civil engineer or draughtsman named Richard Relf, a very capable man. He was the engineer and draughtsman for that part of Duluth that was first laid out, the City of Duluth. The plat was drawn by him.

Q. How was the data for that map prepared?

A. Well, he prepared it and the map published by him formerly, and from accounts, best way that he could find, consulted me and others, trying to get up a correct map.

Q. What was the purpose of publishing that map?

A. Advertise real estate.

Q. Were you in the real estate business at that time?

A. Yes, sir.

Q. At Superior?

A. At Superior.

Q. And you were selling lands all around in this vicinity?

A. All around Superior and Duluth and Carlton and all around. That's why the map was extended so as to embrace this territory.

Q. You were selling real estate throughout the territory embraced in that map?

A. Yes, sir.

Q. And the purpose of publishing the map was for commercial and advertising purposes?

A. Yes, sir.

Q. Do you know anything about the boundary line that is indicated on that map?

A. No; I didn't know anything about that until my atten-
1200 tion was called to it not long since. My attention was called to this boundary line, to that line said to be the boundary line, the first time I had noticed it. It was put on there by Mr. Relf, not with any object in mind that I know of. The object was to show that it was between two states, I think—nothing else. It was the division of the states here at the head of the lakes.

Q. You don't think there was any effort or purpose to locate that boundary line?

A. Oh, not at all; never thought of the thing.

Q. But rather for the purpose of calling attention to the fact that Minnesota was on one side and Wisconsin on the other?

A. Yes; that was about it; head of the lake here, between the states.

Q. Mr. Bardon, what is this?

A. This is a leaf of a newspaper called the Superior Chronicle, the first paper published in Superior so far as I know. It always has the repute of being the first paper published in Superior. It is dated Tuesday morning, June 12, 1855. It is entitled Volume I, number I, $2.00 a year.

Q. Have you seen that before?

A. I have seen it before.

Q. Does it belong to you?

A. It belongs to me. It was taken from my files. I have a file of these papers running through several years, years of publication of the paper.

Q. Where did you procure those files?

A. I procured them from a gentleman named Edwin C. Becker, who formerly lived in Superior, and went to the Civil War,
1201 and after his return, a short time after his return, he concluded to move to St. Paul, and I bought those papers from him at that time.

Q. About what time did you buy the paper-?

A. It must have been '67 or '8, along there.

Q. And you have had them in your possession ever since?

A. Had them in my possession ever since. This is the first leaf of the first page of those files.

Q. Front page?

A. Front page, yes, sir.

Q. It would be the first page and the second page?

A. First page and second page.

Attorney-General Owen: I offer to read in evidence an article appearing in this paper entitled "Entrance to the St. Louis River." The article is as follows: "The entrance to the St. Louis River has within the past week, been buoyed out by competent gentlemen, and for the information of captains of steamboats and sailing vessels engaged in the navigation of Lake Superior and its tributaries, we give below the positions of the buoys at the mouth of the river. The channel has been carefully sounded; and by observing the directions indicated, the ingress of vessels of not more than twelve feet draft, will be accomplished with ease and safety. The depth of the channel at the mouth of the river has increased since last season about four feet. To those who have been in the Bay of Superior, it is needless to discant upon its merits, and to those who have not we will only say that, as a harbor it has no equal on the lake.

1202 The following are the directions:

"Boats entering the St. Louis River will find a buoy on the

outer end of the harbor making out from Wisconsin Point; this buoy is in nine feet water on the extreme end of the point. The second buoy is in eight feet of water on the edge of the same bar, some three hundred yards from the first. The third buoy is on Minnesota Point, in nine feet water, leaving a channel 1200 feet in width and from 13 to 15 feet deep. As vessels make the other buoy they will pass to the starboard of it and steer for a target which has been placed on Wisconsin Point; they can approach to within 300 feet of the point, before making the turn for the St. Louis."

Q. Mr. Bardon, do you know whether or not there is a current flowing through the waters of St. Louis Bay and Bay of Superior out through the Superior natural entry?

A. Oh, there is, yes, yes.

Q. How do you know?

A. I have seen the current. I have seen logs and timber and things coming down with the current.

Q. Is that current clear across the bay or is it confined?

A. It is down in the channel of the bay. That is, it was. It is divided now into the dredged channels, I suppose.

Q. But before any dredging was done?

A. Before any dredging was done it came down mainly, the strength, the strongest part of the current was in the channels that is shown by Meade's map.

Q. Have you ever observed what part of the bay the ice would go out of first in the spring?

A. Well, the part nearest the entry always, I think; nearest the entry, in the entry.

1203 Q. Would it go out of this channel before it would go out of the other parts of the bay?

A. Yes. That was the most dangerous part always in traveling on foot across the bay or by team; greater danger when going over the channel than at any other point; danger of breaking through.

Q. What was the first time you ever heard any public discussion or controversy with reference to the exact location of the boundary line through these waters?

A. I don't recall anything earlier than when the subject came up four or five years ago when a commission was appointed to look after the boundary line. I don't recall any earlier discussion than at that time.

Q. You mean, appointed by the legislatures of these two states?

A. Yes, sir; I *in*tended some meetings of the commissioners here.

Q. Prior to that time had the exact location of the boundary line been a matter of public discussion so far as you knew?

A. I didn't know that it had. So far as I know, I didn't hear very much about it. At least, I don't remember. If there was anything about it I don't remember.

Q. Now you are at the present time in the real estate business, are you?

A. Yes, sir.

Q. And have been for how long?

A. About 45 years.

Q. And you are familiar with all properties in the City of Superior and around about the City of Superior?

A. General familiarity with such properties.

Q. Do you know whether when the old town site of Superior was originally platted they platted lots under the waters and out

1204 into the bays?

A. I know they did from seeing the plats, and from dealing in such properties to some extent.

Q. You have bought and sold those properties, have you?

A. Yes, sir.

Q. Can you mention some of the prominent properties that were so platted and sold?

A. Well, lots on Bay Street, so-called, and lots on Quebec Pier, and Detroit Pier; some in the water, strictly in the water, and some in the marsh approaching the water.

Q. What do you mean by Bay Street?

A. It was the street in the plat known as Bay Street running out nearest the outer limit of this platting.

Q. That is all out in the water?

A. All out in the water.

Q. Quebec Pier, where is that?

A. That is where the Daisy Mill now is. Part of that is in the water, altogether in the water.

Q. That is entirely in the water?

A. Well, part of it. There is a small part towards the land end which is in the swamp, what was in the swamp originally before they reached the high land.

Q. Now have improvements been made on these lands out in the water?

A. They have.

Q. How extensive?

A. Quite extensively in some cases. In the case of the mills, two large mills, the Daisy Mill with its elevators, that is now operated; the Listman Mill with its elevator was entirely in the water.

Q. And they have been built on land that was platted out in the water?

A. Yes, sir.

Q. What others?

A. Then the elevators. Two systems of elevators in the

1205 same vicinity, built in the same way.

Q. What about the Anchor Mill?

A. That was also. I was speaking of the mills that were operated today. The Anchor is also in the water.

Q. That isn't being operated?

A. No, sir.

Q. What is the value of those properties roughly speaking?

A. You mean today, the value of the improvements?

Q. What was the investment made? Perhaps that would be better.

A. I would have to think a little while. I would think the in-

vestment in the Listman Mill was probably a quarter of a million dollars—I mean, in the Daisy Mill. And in the Listman Mill perhaps a hundred and fifty thousand dollars.

Q. The Anchor?

A. The Anchor is idle.

Q. But there was an investment?

A. Originally, yes. About a hundred thousand dollars when it was originally built. It had no elevator built in connection with it; and I think it cost about a hundred thousand dollars, the mill and the dock.

Q. Can you recall any other improvements that have been made?

A. There are two elevator systems there; must have been a couple of hundred thousand dollars put into each system; may be more.

Q. Are there any other improvements?

A. Well, the Northern Pacific is building a dock below that, rather east, with a large expenditure; I don't know how much.

Q. You say they are building it now?

A. They are building it now. They are working at it today; and further down immediately opposite the entry is a very
1206 large system of docks owned by the Great Northern. They are built in the water altogether.

Q. Extend out into the water?

A. Extend out into the water. That would run into millions and so would another dock in Allouez Bay, a coal-dock, and an elevator of the Omaha Company.

Q. Then it isn't extravagant to say that improvements running into millions of dollars have been made into this water?

A. Not extravagant at all; and up this way further there is the docks, the Northwestern dock and the Hanna dock and others on the bay.

Q. That is on Connors Point?

A. They are not on platted lands, though. The land was not platted as it was further down.

Q. But the improvements have been made right out into the water?

A. Into the water from the shore.

Mr. Bailey: The railway docks aren't on platted land, are they?

The Witness: The northern Pacific is, a large part of it. It would reach out beyond the plat where it is platted. The Great Northern was partly platted and partly unplatted.

Mr. Bailey: It's not on land platted under water.

The Witness: Oh, yes, yes; this map will show it. There is a map that will show it right there.

By Attorney-General Owen:

Q. I show you Exhibit number 51 and ask you what that is?

A. It is entitled "Preliminary Chart Part of Lake Superior, Comprising the Data Obtained Up to the Close of Field Operations in 1869. Surveyed and drawn under the direction of Bvt. Major General Reynolds, Lieutenant Colonel of Engineers, Published under the

direction of Bvt. Major General B. J. Comstock, Major of
1207 Engineers, 1870."

Q. Whose property is that?

A. My property.

Q. How long have you had it?

A. I don't know. I have had it for some years.

Q. Approximately?

A. Probably 25 years.

Attorney-General Owen: We offer that in evidence.

Mr. Fryberger: These red lines are put on there by you, aren't they, at Superior entry?

The Witness: Put on by me.

Attorney-General Owen: That is no part of the map.

The Witness: That was done for use in another case, different kind of a case.

Mr. Fryberger: That map is evidently a veteran.

The Witness: Through some wars.

Attorney-General Owen: We won't to photograph that map. I suppose there will be no objection.

The Commissioner: Leave is granted to substitute photographic copy and withdraw the original.

Cross-examination.

By Mr. Hanitch:

Q. Mr. Bardon, did you bring over the Relf map, the map that Relf made?

A. I think I did.

Q. Where is it?

A. It's in a package here in the other room, Mr. Owen, isn't it?

Q. Witness being shown Minnesota's Exhibit number 53 is asked what is that?

A. It is entitled "Map of part of Douglas and LaPointe
1208 counties, Wisconsin, also St. Louis and Lake County, Minnesota; territory situated on Lake Superior, published by Mitchell, Rice & Relf, dealers in real estate, Superior, Wisconsin, 1875."

Q. Is this the same Relf that you referred to in your direct testimony as having prepared a map for you?

A. Yes, sir, the same.

Q. Mr. Bardon, I call your attention to the part of this exhibit 53 which shows the Bay of Superior, St. Louis Bay, and the upper St. Louis, and St. Louis River, state whether or not Mr. Relf in this map undertook to lay down the state line?

A. I don't see any marks. Perhaps this (indicating); it looks like that was intended to be something in that way. I don't see any going up at the bay, as on the other map.

Q. This map was prepared in '57, was it not, published in 1857?

A. Yes, so it says.

Q. State whether or not there is any printed matter or other noto

at the Superior entry which designates that place as the mouth of the St. Louis River?

A. I don't see anything.

Q. Now, referring to your map which was published in '76, at whose suggestion were the words "Mouth of the St. Louis" placed at the Superior entry?

A. I don't recall whether it was my suggestion or not. I don't remember.

Q. State if you know at whose suggestion the state line was laid down on the map which you published?

A. I don't know. I don't know anything about it.

Q. After having looked at Mr. Relf's own map published
1209 in '57 would you say that in the preparation of the map which you published Mr. Relf must have received instruction from somebody to place the words "Mouth of St. Louis River" on that map and also must have received instructions from someone to lay down the state line on that map?

A. I don't remember that he received any instructions from me about that. He, of course, may have copied some other map that had those things on it, too.

Q. But evidently he didn't copy his own map that was published in 1857?

A. Not at that time, no.

Q. Now, Mr. Bardon, looking at your map which was published in 1876 would you or wouldn't you say that the state line that you have laid down in your map would lead any stranger to believe that you desired to carry the impression that the state line between Minnesota and Wisconsin was down substantially the center of the Bay of Superior, the center of St. Louis Bay and the center of upper St. Louis Bay and the center of St. Louis River above that point?

A. Well, I don't know the impression it would carry; I had no design, in fact didn't know anything about it, never thought of it; never noticed it. It might carry one impression to one person and another to another; I don't know.

Q. Well, for one that contemplated purchasing from you, property located in the State of Minnesota, would you not say that from your map here he would have a right to believe that he owned land to the center of these bays when he purchased from you?

A. I don't think if he was a shrewd purchaser he would depend
very much upon a map published by a real estate man to
1210 advertise real estate, any more than he would on a railroad folder advertising a railroad running in a straight line that might run in all sorts of directions.

Q. Don't you think that your selling land in both cities and offering this map showing a boundary line between the cities,—don't you believe that a man buying a piece of land located on either one of these bays would have a right to believe that his riparian rights would extend to the center of those bays?

A. Well, I don't think that any man could count on that, would depend on that. I never thought of such a thing one way or the

other; never had any trouble with anybody about it, because a purchaser looks it up in his own way; he doesn't depend on——

Q. Isn't it a fact that no man ever claimed beyond the center of these bays until the last few years, living or owning land in either one of these cities?

A. That's not true, because in the original plat of Superior the original townsite they claimed, as shown by this map, they claimed here out almost to the light-house, nearly across at that time.

Q. They claimed about what is designated as the channel, did they not?

A. They did, yes. I think they did, judging by their printed matter.

Q. By the platting?

A. Yes, sir, platting.

Q. And does not your line, the state boundary on your map, show that the state boundary extended out to that place?

A. I don't know.

Q. Well, look at it and see?

A. I would like to see it again.

1211 Q. Here it is. It is Minnesota's Exhibit 13.

A. I say, it's about as they claimed it, that line points about, at that time.

Q. So that the original owners of the townsite of Superior, in platting the land, fixed their limit at the state boundary line as you have given it on your map, did they not, substantially so?

A. Substantially at that point, at that point.

Q. Well, did you ever know anyone above that point to make any claim beyond that line or substantially that line?

A. That line is as new to me as it is to anybody else. As I said, I never noticed that line until my attention was called to it not long since.

Q. Mr. Bardon, do you know of any map published for use in showing the situation at the head of the lakes, by Superior real estate dealers, which did not show the state boundary line substantially as you show it on your map?

A. I think there were many maps published, little maps that didn't show any lines, any marks at all. I think I have seen such maps.

Q. Do you recall now anyone who published such maps?

A. No.

Q. You knew Charlie LeGrow in his lifetime, did you?

A. Yes, sir.

Q. He was county clerk of Douglas County?

A. Yes. I knew Charlie LeGrow. I knew Strand.

Q. Brooks and Smith, did you know them as real estate dealers?

A. Yes, sir.

Q. Looking at Minnesota's Exhibit 5, which is one of their maps, do they not show the state boundary line substantially as you show it on your map?

A. They show a line there. It doesn't say what it was,
1212 does it? At the mouth, State of Minnesota, State of Wisconsin.

Q. State boundary.

A. Yes, they show it that way. I don't know what prompted them to show it.

Q. Did you know Sandberg?

A. Yes.

Q. Wasn't he a county officer at some time?

A. He was register of deeds.

Q. Do you know whether he was register of deeds at the time you published Minnesota's Exhibit 6 in 1896?

A. I don't know that; I rather think he was.

Q. Looking at Minnesota's Exhibit 6, which is a map published by him, does he not show the state line substantially as you show it on your map?

A. Yes.

Mr. Fryberger: And marked "State Line."

The Witness: Marked "State Line". Yes, he shows that.

By Mr. Hanitch:

Q. Did you know the surveyors and draughtsmen W. W. Howard and R. H. L. Jewett?

A. No, I didn't know them.

Q. Know Merritt & Company?

A. Yes, sir.

Q. Looking at Minnesota's Exhibit 9, which is a copy of one of their maps, does that not show the state line substantially as you give it in your map?

A. It seems to make a mark around the middle of the stream, yes.

Q. Did you know the real estate men, Lewis and McNair?

A. Yes.

Q. Who were they?

A. They were real estate men in Duluth, both dead.

1213 Q. Looking at Minnesota's Exhibit 10, which is one of their maps that was published in 1888, do they not show the state line substantially as you show it in your map?

A. They show a line there. I don't see that they say what it is; have to assume that they intended it as state line, perhaps. Don't say.

Mr. Fryberger: Seeing that map would there be any doubt in your mind as to what that was made to indicate in view of these other maps and your map?

The Witness: If I was buying a piece of land and finding out what the rights were I wouldn't depend on that much.

Mr. Fryberger: I didn't ask you that question.

The Witness: Of course, there would be doubt in my mind.

By Mr. Hanitch:

Q. Now, Mr. Barden, turning to Minnesota's Exhibit 7, I ask you whether you have ever seen or heard of the Bayfield chart of these waters about the head of Lake Superior?

A. Yes. I used to see it on the steamboat, on the steamers.

Q. Was that the chart that the early navigators used in navigating those waters?

A. They used Bayfield's chart. I don't know that it was this one. I know they used a chart known as Bayfield chart.

Q. Assuming that this is a copy of that chart, you should say that it was a chart of this kind that the early navigators used, would you not?

A. Yes, sir.

Q. And this was then succeeded by what was known as the Meade chart?

A. Meade was the next, I think, as I remember it.

1214 Q. Now, Mr. Bardon, as I recall your testimony you said there was about 7 feet of water over the bar at the Superior entry when you helped first to——

A. Seven to twelve feet, I think.

Q. Was that in the '50's or '60's you sounded there?

A. That was in the '60's; '67.

Q. In the '60's, Mr. Bardon, were there any boats in the bays engaged in commercial work that drew more than six or seven feet of water?

A. Oh, yes; boats coming from below, the lower lake ports.

Q. Were there any using the waters above Quebec Pier or above Connors Point and Rice's Point that drew more than six or seven feet?

A. Yes; I think there were; not many, but I think there were tugs, large tugs.

Q. How far up would they go?

A. They would go up to Fond du Lac some times.

Q. How much water would they draw?

A. Six or eight feet, perhaps.

Q. Six or eight feet?

A. I would think so. I am not the best authority on that. Tugmen and boatmen would be the men.

Q. Would be the better men on that?

A. Better men on that.

Q. And your judgment would be they didn't exceed eight feet?

A. Yes.

Q. You never owned any of those tugs, did you?

A. No, sir.

Q. Or interested in any of them?

A. No.

Mr. Hanitch: Now we will offer this Minnesota Exhibit 53 in evidence and ask the privilege of having it photographed and

1215 put in in lieu of the original.

The Commissioner: The exhibit will be received and photographed and the photograph put in evidence.

By Mr. Fryberger:

Q. Mr. Bardon, when did you have your saw-mill and shingle mill over on Superior Bay?

A. Shingle mill was put on the bay I think in about 1875 and continued there until about 1881 or '2.

Q. You ran it during all that time?

A. Yes, sir.

Q. How long was your saw-mill there?

A. The saw-mill was one of the earliest saw-mills at the head of the lakes. It was purchased second-hand by me. It was originally owned by Mr. John D. Howard.

Q. The one who had been on Connors Point?

A. Yes, sir, the same.

Q. Moved up to Superior Bay?

A. No; it was there always. He purchased it from a gentleman from Ohio, who built it.

Q. How long did you run that saw-mill?

A. It seems to me three or four years.

Q. You never were very extensively engaged in the lumber business, were you?

A. I was to the extent of the capacity of these mills. That brings out another point. I had an interest in a saw-mill at Duluth on Miller's Creek, a water-power mill; cut quite a bit of lumber there where Lincoln Park now is.

Q. How much?

A. I don't know. It was called a good deal in that day, perhaps a hundred thousand.

Q. A hundred thousand a year?

A. Oh, no; altogether. This saw-mill on Connors Point
1216 cut only three thousand a day. It was out of order a good share of the time, as were saw-mills usually in those days. Three thousand a day was a good-sized mill.

Q. They would be very small affairs for nowadays?

A. Indeed they would.

Q. As a matter of fact, most of your business career has been that of a real estate dealer?

A. For the last forty odd years.

Q. Now, as a matter of fact, there is no question being raised about the state line between Wisconsin and Minnesota until recent years, has there?

A. I don't recall any; might have been.

Q. You say, as I understand it, that you never noticed that state line on the map you published until just recently?

A. Never did; never thought of it; never thought it referred to division of states or anything of that kind. I may have seen it as showing the division between Minnesota and Wisconsin, offhand, but never thought of it as any line indicating any proper division.

Q. You not only published it one year in '76, but you published it and sold it year after year, didn't you, or gave it away.
A. Gave it away.
Q. Different years?
A. Yes.
Q. Much earlier than '76?
A. I don't know how many people have been defrauded by that.
Q. Did you do it for the purpose of defrauding anybody?
A. No. I say, I never thought of it at all.
Q. Didn't practically everyone at the head of the lakes during those times regard that as the boundary between the states,
1217 that line?
A. I don't know that.
Q. Well, do you think that you would have had that put on the map unless it would have been your understanding that it was there?
A. I didn't have it put on the map. I didn't have it put on the map. The draughtsman put it on the map. I didn't know a thing about it.
Q. Now tell us, Mr. Bardon, what else was on these maps of these different vintages from year to year that you didn't know was on that map, although they were published by you and sold by you?
A. We weren't very deeply interested, people weren't generally, in the state line; didn't give much attention to that in those years.
Q. I asked you what else was on these maps that you published from year to year that you didn't know anything about or never saw until recently?
A. I don't know; might hunt up something that I didn't know or see.
Q. Did you ever see any of these other maps we have called your attention to showing the state line?
A. Saw them, yes.
Q. No question was ever raised so far as you know about that being the state line, by these early settlers?
A. I don't know that there was, no, sir.
Q. Now, take this map Exhibit 27. Do you know what years you published that map and gave it out?
A. These maps are dated; one set was in '75, another one '76.
Q. But there were often other dates?
A. Not that I know of.
Q. You don't know the date of that particular map?
A. No.
1218 Q. Now you said, on this Relf map, that you didn't know,—this Minnesota's Exhibit 53, I think it is,—you didn't know but what this dotted line running out from the Superior pier at the Superior entrance was the State line and was meant to indicate the State line on that map?
A. Yes.
Q. Now looking at that dotted line extending out through Lake Superior and starting from a point on the Wisconsin Point, pier at Wisconsin Point, running out the lake and then branching off and

going in among the Apostle Islands, you don't mean to say that was put on there to indicate any state line the same as your map?

A. No, it does not.

Q. It shows quite plainly what it indicates?

A. When I made my remark regarding it I didn't look down here. I thought it looked like the middle of the lake, as the organic act of the——

Q. Don't it look to you like the line for the ships to travel coming up to that Wisconsin pier?

A. That's what it was; that's what it was.

Q. Now, Mr. Bardon, you said that you went up to Fond du Lac on the Seneca, as I understand it, in '61?

A. Yes, sir.

Q. That boat didn't draw over six feet of water, did it?

A. It was reputed to draw six or seven feet of water.

Q. Now, as to where you went when you got above Grassy Point you wouldn't pretend to say at this late date, would you?

A. I would pretend to say that we went north of the island.

Q. North of Big Island?

A. North of Big Island, yes, sir.

Q. Now, let's step down to this map. I call your attention
1219 to Minnesota's Exhibit 1 and I call your attention to the island marked "The Island." That is Big Island. All you remember is that when you get above Grassy Point you went to the northerly of Big Island?

A. Yes, sir.

Q. Did you know, as a matter of fact, where the navigators such as the Merritts and the Howards and those who navigated this bay in the early day- customarily went, whether they went south of the island or north of the island when they were going up the river?

A. I don't know anything about it at that time.

Q. Were you ever a navigator at all, that is, of large boats?

A. No, I never was.

Q. You never was in the tug business?

A. No, sir.

Q. Never ran a tug?

A. No, sir.

Q. Never had a pilot's license?

A. No. I never had to do with it in that way. I have hired tugs and traveled on tugs.

Q. It wasn't your business to seek out the channels up above Grassy Point?

A. No, sir.

Q. Never has been?

A. No, sir.

Q. And you wouldn't be as competent to testify to those channels as the Merritts and the Howards who ran boats up there?

A. Not as competent as men who had run boats up there.

Q. Do you know of those men running boats up there?

A. I do, yes.

Q. The Merritts were competent men?

A. Yes, sir.
Q. In the nautical business?
A. Yes, sir.

Q. Do you know, Mr. Bardon, of your own knowledge,
1220 whether or not in the early days, in the '60's and '70's, the customary channel for boats to take, I am speaking now of your own knowledge, was the line marked in red on Minnesota's Exhibit 1, running from the point A, up by G, to B, and then to C, of your own personal knowledge?

A. I know they—went around there somewhere. I don't know—Here is the channel around there as shown by this chart, right up around there and around on the westerly side of Grassy Point.
Q. (Last question read.)
A. No, I did not.
Q. (Former answer read.)

Mr. Owen: Witness pointed to channel marked H on Minnesota's Exhibit number 1.

Mr. Fryberger: It leaves that very confusing. Now I want to ask you this: Of your own knowledge, Mr. Bardon, whether or not in the '60's or '70's you knew whether or not the navigators who went up the St. Louis Bay beyond Grassy Point traveled as a customary route the line marked on Minnesota's Exhibit 1, running from A to G and G to B and B to C, of your own knowledge I am asking you?

The Witness: I do not.

Q. You have answered that question. I will ask you this: Calling your attention to Minnesota's Exhibit 1, did you know of the channel running from E around to F in upper St. Louis Bay being used by boats?
A. No, I did not.
Q. Do you know what depth of water was in the channel running from A to G and G to B and B to C?

1221 A. No; only as I see it on the map.

Q. You never knew anything about the actual soundings through there?
A. No.
Q. Do you know of any reason, if the soundings showed not less than seven feet at any point here, a boat drawing six or seven feet couldn't go through there?
A. I should think they might if there was water enough.
Q. Did you know of your own knowledge of the bar in what we call channel H, just exactly north of C, not talking about what you heard, Mr. Bardon?
A. No, I didn't; never knew a thing about it one way or the other.
Q. Did you ever know that there was a shoal place there, not over seven feet and nine-tenths?
A. Don't remember definitely.
Q. Didn't know anything about any dredging being done there, did you?

A. Oh, yes; some dredging was done in around there; that is, widened it.

Q. That was when the channel was made?

A. Haven't followed that closely; haven't been engaged in that work.

Q. That is, those channels wasn't a matter of your business at any time; wasn't that true?

A. Well, to some extent it was.

Q. In running boats?

A. I will tell you something——

Q. Just wait a minute. I can't ask questions and have you volunteer. Your counsel will give you a chance to tell that. Did you know about the channel running from B to F and F to D?

A. No, I didn't.

Q. Didn't know about that?

1222 A. I would just like to make a small statement, as my testimony is somewhat questioned. I will show you what ground I have for some knowledge of things up there. It's a sort of a side story.

Mr. Fryberger: To keep this examination orderly your counsel will ask you. We have to carry this on in a certain way.

By Mr. Bailey:

Q. Mr. Bardon, where did you come from to Wisconsin?

A. State of Kentucky.

Q. How old were you when you came up here?

A. Thirteen years of age.

Q. I suppose in the early day- you made a study of the history of Wisconsin, amongst other things, didn't you?

A. I suppose I did.

Q. And in those days you were familiar with the act of admitting to the Uuion—it had only been admitted just a few years before your school days?

A. I don't recall what I knew about it.

Q. What?

A. I don't recall now what I did know about it.

Q. Well, who was it that you say was associated with you in getting up this map, trying to get it accurate, you said there were several?

A. We consulted different people about things which we weren't familiar with.

Q. You say "we"——

A. Mr. Relf and myself. Mr. Relf was a draughtsman and engineer. He was deputy county clerk; had access to the books and records and things.

Q. Who did you consult?

A. Well, I can't tell now, but I knew we sought to get information. Consulted some people may be we thought would know, as a man might in getting up a map.

1223 Q. So you took a good deal of pains in getting out the map to get it accurate.

A. Yes, sir.

Q. And in fact, outside of Relf's own map, this was the first one that was published?

A. The first I remember after Relf's own map.

Q. So you and he took a good deal of pains to get it accurate and consulted the people you thought would know?

A. Yes, sir, but as to the harbor line I never thought of that before, or since, until my attention was called to it.

Q. You don't mean to say you were accurate on everything except that, do you?

A. No, I don't I didn't put that out as absolute——

Q. You said harbor line; you mean state line?

A. State line.

Q. So far as you know there was some attention given to that, wasn't there?

A. I don't know of any at all; I don't know anything about it.

Q. It was so commonly accepted during all of these years until three or four years ago that it was taken as a matter of course, that line, wasn't it?

A. I don't know anything about that. As I say, I never noticed that on the map; didn't think of it at all. My attention was never called to it.

Q. You never heard of any map that's been published at the head of the lakes on either side, that gives the state line at all, but what shows it substantially in that same place?

A. I don't know that I have.

Q. I say, you never heard of any?

A. I don't know whether I have or not. I haven't investigated that point; haven't looked over all the maps that were pub-

1224 lished.

Q. Do you now remember of any?

A. I remember of some that have that on it.

Q. Do you remember of any that have the state line marked at all that don't have it marked substantially in that same place?

A. I don't recall now. I think I have seen some.

Q. You have made a good deal of search pending the trial of this case to find out anything that was in favor of the Wisconsin side?

A. No, sir.

Q. I say—You have come here with an armful of papers——

A. Yes, and I could bring a good deal more.

Q. But in all your search you haven't been able to find any map that shows the state boundary at all that shows it any different place than your map shows it?

A. Haven't endeavored to find anything only the government reports or any maps—paid no attention to the real estate maps or any such things. I go by General Meade's charts and what I know of the channel that is shown by him.

Q. You paid a great deal more attention to getting this map

accurate than the ordinary real estate firm does nowadays, to getting out a map?

A. The draughtsman, who was more competent than I was and more familiar with it, did all that work, and I accepted it.

Q. And the ordinary real estate map that is gotten out is just a creature of the imagination of the——

A. Often, like the railroad folder.

Q. But this map wasn't that at all, when you had an en-
1225 gineer who had previously published the most accurate map that there was in your territory, and you and he consulted and both of you consulted other people to get it accurate?

A. The design was to get an accurate map. Our design was to get an accurate map; but there is probably things on there, other things, that I never saw or thought of, if they were stirred up.

Q. There were a very considerable number of those maps printed, were there not?

A. I think so.

Q. Was that during the time that you were running a newspaper up here?

A. That was before that a little bit, yes. I commenced to run the newspaper in '76 and that was published in '75 or '76.

Q. So one year of publication was the same year of your running a newspaper?

A. Yes, but the map was out, I think, before I commenced to run the paper.

Q. What paper was that you published?

A. Superior Times.

Q. How long was it published?

A. Five or six years.

Q. Was that the only paper published in Superior during that time?

A. No; it was the only paper published at the East End. I think one or two papers at the West End of Superior had started, I think they had one or two papers before I sold out.

Q. What position did you occupy with reference to that paper?

A. I was the editor and business manager.

Q. And also owner, were you not?

A. Owner.

Q. Wrote the editorials, of course?

A. Yes, sir; clippings, too.

1226 Q. Did everything but the typesetting?

A. Yes; everything but the typesetting.

Redirect examination.

By Attorney-General Owen:

Q. Mr. Bardon, you wanted to make a statement here with reference to these channels in the St. Louis Bay, when you were being cross-examined by counsel, which you were not permitted to make. I will ask you to make that statement now.

A. That statement is this, as going to show some real knowledge

of conditions up there. Now in 1862 the Merritt boys you have named, very excellent men, Leonidas and Alfred and two other brothers, four of them, with myself, took a contract to load a vessel up there opposite Millford, in that channel. The lumber for — sawed at a little mill at Millford, conducted by Mr. Victor Desimval at that time, and we rafted it out from the mill, made it into a raft and pulled it out to a boat standing in that channel that you speak of, on the southerly side of Grassy Point. These four men, with myself, took that job, and were several days at it and loaded that boat with that lumber, so that I did have some experience up there and have some basis for stating where the channel is.

Mr. Hanitch: They told of that experience.

The Witness: Did they tell of that? I hadn't talked with them about it for many years. I boarded with them down at Oneota. That was what I wanted to say.

By Attorney-General Owen:

Q. The purpose of that real estate map was to enable you
1227 to sell real estate, was it not?

A. Yes, sir; used mostly for marking the lands outside, not along the harbor much but outside lands, farming lands.

Q. But at least there was no discussion between you and Mr. Relf as to the location of the boundary line?

A. I think not; don't recall any; never thought of such a thing; I didn't.

Q. And the boundary line was put on there without your knowledge or without advising with you or consuling you at all?

A. That's what it was.

Q. And it is your judgment that it was simply a random line?

A. That is all.

Q. Where did Relf live?

A. He lived at the East End at the time. He was county clerk, I think, at the time. He drew the map, I think, at the courthouse while he was county clerk.

Q. Was there any investigation made for the purpose of determining the boundary line?

A. None whatever. I can't say today what were his intentions. I don't know a thing about it.

By Mr. Fryberger:

Q. I will just ask you a question about that contract that you and the Merritt boys had to load a boat at Millford?

A. Yes.

Q. You did this work yourself?

A. Yes, sir; five men; yes, sir.

Q. Now that was the only way to get up to Millford, was it not, going up that channel that you speak of?

A. By river, yes.

Q. When you loaded that boat you didn't go any further up the bay, did you?

A. Not at that time, no; the boat anchored on the——

1228 Q. When you got a load on you turned right around and came back the same way you went up?

A. Yes, sir.

By Attorney-General Owen:

Q. Did you pole a boat or help pole a boat from Superior clear up to Fond du Lac one time?

A. Yes, I did.

Q. When was that?

A. That I think was in the spring of '62.

Q. Tell us about that?

A. Well, in conjunction with four or five others, I can give their names: William R. Durfee, died in Ashland recently; George E. Wheeler; Thomas Sexton; Joseph Mayer; and Frank Roussain, half-breed. We pulled by row boat and pulled a scow from Superior, Quebec Pier, first to Duluth and then up the St. Louis River to Fond du Lac, occupying two days in making the trip, camping on the way at the Kiichli Meadow, camping over night at the Kiichli Meadow.

Q. What course did you take?

A. We went up the river by the shallowest water. We sought the shallowest water going up, because it was poling with long poles. The scow perhaps didn't draw more than two feet of water. We went up on the southerly side of the island.

Q. That was because it was the shallowest water?

A. Shallowest water, ran as near to the shore as we could where we could find bottom to pole. We had poles with a row boat.

Q. And the current was less there, too, wasn't it?

A. The current was less there, too.

By Mr. Fryberger:

Q. Do you say the fact that it was about two miles shorter

1229 than the other route had anything to do with it or not?

A. It would with a row boat.

Q. Did it have anything to do with your taking that route?

A. Yes; wanted to make the trip as quickly as possible, with as little labor as possible, certainly wouldn't want to take the longest route around.

By Mr. Hanitch:

Q. Mr. Bardon, you know of the corporation which when first organized was called the Land and River Company and then reorganized and called Land and River Improvement Company and then reorganized and called Land and River Company Reorganized?

A. I think I do.

Q. That is the company that bought and platted substantially

all of the land on the waterfront west of a point at about L Avenue, is it not?

A. Well, west of Winter Street.

Q. They owned all of the waterfront on Connors Point and on the St. Louis Bay and up above Grassy Point, did they not?

A. Well, the waterfront, on the front up to Connors Point, they didn't own much on Connors Point; the waterfront on the Sweetzer track, so-called, and then up the St. Louis Bay.

Q. And they were dealing in those lands, were they not—what you call dock property?

A. They were, yes, sir.

Q. Now would you say that they would be interested somewhat in the state line in those waters, owning that class of property?

A. I would think they would be but I never heard any talk about it or any discussion about it.

1230 Q. Will you look at Minnesota's Exhibit 31. Do you note a line marked on the waters of the bay, of Superior and St. Louis Bay and upper St. Louis Bay, which is designated as state line?

A. I notice that now, yes.

Q. And from there down into Superior entry?

A. Yes.

Q. State whether or not that line corresponds substantially with the state line which you used on your map?

A. It is somewhat like it.

Q. Isn't it substantially like it?

A. Up through the middle of the bay.

Q. And then it swerves over towards the Minnesota Point, does it not, as it reaches Superior entry?

A. I can't see. They must have followed my map, may be, eh?

Q. Yes. Don't that show that the owners of the townsite of old Superior platted up nearly to that state line?

A. Yes, to that line, yes.

Q. Assuming that that is one of the old maps that this great corporation, land corporation used, would you designate that as a sort of a railroad folder map or would you think that that really indicated that they thought their rights were limited by that state line?

A. Well, I don't know anything about that. I never heard any discussion of that on their part.

Q. You do know they owned a great deal of the waterfront property?

A. A frontage down this way, yes.

Q. And sold it, and that much of it has been improved?

A. Harbor line here (indicating).

1231 Q. And much of it has been improved out to the harbor line?

A. Yes.

By Mr. Bailey:

Q. Who was this Richard Relf who got up this map with you? Was he quite a well known man at the head of the lakes at one time?

A. Yes, sir.

Q. Do you know what time he came here?

A. Why, he came in an early time.

Q. Before you did?

A. Yes, sir.

Q. You came in '57?

A. '57. Mr. Relf, I think was here in '55, '54 or '55.

Q. And he was a very competent engineer, was he not?

A. Yes, sir.

Q. And did a great deal of surveying all over around the head of the lakes?

A. Yes, sir.

Q. And he lived at the head of the lakes, around here till he died, did he not?

A. No; he moved away. He moved to Brainerd and went into the service of the Northern Pacific, and then from there to St. Paul.

Q. About what time did he go down there?

A. Oh, I don't know; in about 1880, '81 or '2, somewhere along in there.

Q. But he lived here in Minnesota until he died?

A. Yes, he died in St. Paul only last year.

Q. And was quite an old man at that time?

A. Yes, sir.

Q. Do you know about how old?

A. About eighty-five. Mr. McLain, who sat here a while ago, was a brother-in-law, if you want to find out all about him.

1232 Q. What homestead was it you said you took?

A. Northwest quarter of 14, town 48, range 15, right apposite New Duluth.

1233 O. S. Olson was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live?

A. 420 Hammond Avenue.

Q. Superior?

A. Yes, sir.

Q. How long have you lived in Superior?

A. About 24 years.

Q. What is your business?

A. Construction foreman, pile driving.

Q. You are in the employ of Whitney Brothers Company?
A. Yes, sir.
Q. Have been in their employ for some time?
A. About eighteen years.
Q. Been driving piles you say, foreman driving piles?
A. Yes, sir.
Q. Did Whitney Brothers Company drive the piles for the Carnegie Coal-Dock up above Grassy Point?
A. Yes, sir.
Q. When was that?
A. Five years ago; five or six years ago.
Q. Were you foreman there at that time?
A. Yes, sir.
Q. Driving piles?
A. Yes, sir.
Q. You had charge of it for Whitney Brothers Company?
A. Yes, sir.
Q. Where did you start driving piles, in toward the land or out toward the dock line?
A. Up toward the land, up against the shore.
Q. And what length of piles did you use?
A. From 35 to 46.
1234 Q. Well, what kind of ground did you find there in next to the shore?
A. Hard.
Q. After you got out a distance what kind of ground did you find?
A. She was going on hard till we got out quite a ways, a little ways, and then she dropped right off.
Q. And was there an inspector there representing the dock company?
A. Yes, sir.
Q. Who was he?
A. His name was Hanson. I couldn't think of his first name.
Q. Did you talk with him about the drop-off there?
A. Yes.
Q. What did he say about it?

Mr. Hanitch: Objected to as immaterial, irrelevant and incompetent.

The Commissioner: Taken subject to the objection.

A. Said piles were too short, bound to have longer piles.
Q. Did he say anything else about what it was out there?
A. Getting in to what they called the old channel.
Q. Said you were in what was——
A. The old channel.
Q. And what kind of pile driving did you find out there in the old channel?
A. There was no bottom at all. The piles was too short; they wouldn't reach bottom.

Q. You mean solid bottom?
A. No.
Q. What do you mean there when you say they wouldn't reach bottom?
A. Won't reach bottom; no solid bottom.
Q. Did you ask for longer piles?
A. Well, I don't remember. The company furnished piles and they wouldn't get any longer piles, and we put in the piles we had, 46's.

1235 Q. Whitney Brothers weren't furnishing the piles; they were just driving the piles?
A. Yes, sir.
Q. Was there talk about their not being long enough?
A. Yes, sir.
Q. And the coal-dock company wouldn't get any longer piles, would they?
A. No.
Q. And you drove them?
A. We drove what we had.
Q. After you got across what Mr. Hanson said was the old channel, what kind of ground did you find?
A. Struck harder ground again.
Q. Was there concrete put on top of those piles?
A. Yes, sir.
Q. Do you know whether or not this settled over that old Channel?
A. Yes, sir, settled down; had to raise it up.
Q. Was it common talk there that that was the old channel?

Mr. Fryberger: Objected to as incompetent, irrelevant, immaterial, hearsay.
The Commissioner: Taken subject to the objection.

A. (No response).

Cross-examination.

By Mr. Hanitch:

Q. Have you driven any piles on Minnesota Point or Wisconsin Point?
A. Yes.
Q. What was the character of the soil that you struck with your piles there on Grassy Point as compared with those points?
A. I didn't understand the question.

Q. Well, did you strike the same kind of sandy bottom on
1236 Minnesota and Wisconsin Points that you did up there at Grassy Point?
A. No, sir.
Q. What was the difference in driving on Grassy Point?
A. It wasn't so hard bottom.
Q. What do you mean by hard bottom?

A. Hard bottom, you can keep hitting the pile right along and it will go half an inch or an inch, and when you are on soft bottom you will drop from a foot to eighteen inches or three feet.

Q. Would you call sand and gravel a soft bottom?

A. No. Sand is hard driving.

Q. That is hard bottom, is it?

A. Yes, sir.

Q. Then you struck hard bottom? You struck sand on Grassy Point just as you struck sand on Minnesota and Wisconsin Points, didn't you?

A. No.

Q. I thought you said as you drove in toward the shore on Grassy Point, I thought you testified that you struck hard bottom?

A. Hard bottom. It's clay bottom, what I mean, clay bottom.

Q. You mean you struck clay bottom on Grassy Point?

A. Piles drive harder.

Q. You struck clay bottom on Grassy Point you think, or did you strike sand bottom on Grassy Point?

A. It's clay or sand kind of mixed.

Q. Well, isn't it the same character of soil that you would strike on Connors Point or Rice's Point in driving a car?

A. On Connors Point.

Q. Yes, and Rice's Point.

A. Oh, just about the same.

1237 Q. But you think not the same as you would strike on Minnesota Point or Wisconsin Point?

A. No.

Q. You think there would be more sand in Wisconsin and Minnesota Points than there was in Grassy Point?

A. Yes.

Q. But you think Grassy Point is the same as Connors Point and Rice's Point?

A. No.

Q. What is the difference there?

A. It is about the same only when you come to these soft places.

Q. I am talking now about your driving right up on practically the dry land of Grassy Point, when you were driving in there near where you started?

A. Yes.

Q. You didn't strike the same character of soil that you struck on Connors Point?

A. No.

Q. What was the difference?

A. Well, on Connors Point ain't so very bad driving but you take over on Minnesota Point you can't drive at all there in places.

Q. Why?

A. You strike boulders or strike a hard-pan, you can't even get a jet down to it.

Q. On Minnesota Point?

A. On Minnesota Point, yes.

Q. Now, comparing Connors Point and Grassy Point. In driv-

ing piles on Connors Point and on Grassy Point what would you say about the soils there—about the same?

A. It's about the same.

Q. And the same you think driving on Rice's Point, about?

A. Yes.

Q. Is that about the same as Grassy Point?

A. In places; ground don't run the same all the time.

1238 Q. No; but from your observation and digging there on Grassy Point would you say that Grassy Point in a general way was made up of the same character of soil that Rice's Point and Connors Point is made up of?

A. Yes, just about the same.

Redirect examination.

By Attorney-General Owen:

Q. You don't dig when you drive piles?

A. What's that?

Q. Do you dig when you drive piles?

A. Sometimes we do.

Q. How deep?

A. Well, according to the ground.

Q. What is the deepest hole you dug for the purpose of driving piles?

A. Soft ground don't need to dig, you can drive them right down; but if you have got quicksand or anything like that you have to dig.

Q. Now, when you drive without digging you don't know anything aout the character of the soil, do you, you don't see it, do you?

A. No; don't see it.

Q. All you can tell is whether it is hard or soft?

A. Yes.

Q. It might be hard in sand or clay either?

A. If you strike good bottom your pile will stop or your pile will break, and if you don't strike good bottom you can keep on driving.

Q. So all you know is whether you are in hard soil or soft soil?

A. If in hard soil, pile drive hard; and in soft soil, go easy.

Q. And it might be hard in either sand or clay, might it not?

A. In places; yes.

Q. And it might be soft in either sand or clay?

A. Yes.

Q. That is, it might be easy driving in sand and it might

1239 be easy driving in clay, and all you know of the character of the soil is that it is a hard or soft place to drive a pile?

A. It's harder to drive in sand than it is in clay.

Q. What is the deepest you ever dug a hole to settle a pile?

A. I have drove piles 45, 46, 50 feet,—top of the ground.

Q. And you dug that hole——

A. No; just drove the pile right down.

Q. I say, what is the deepest hole you ever dug in order to get a pile down?

A. Drive 70 foot pile or 65, you jet, may be, according to your water.

Q. I am not talking about how far you were driving a pile now, but you said sometimes you couldn't get a pile down into the ground without digging a hole?

A. What do you mean by digging? You don't dig for a pile, you know; you jet.

Q. That is what I tried to get you to say a minute ago but you wouldn't.

A. We jettying; sometimes we have to dig if the pile is too long for the leads; we dig a little hole may be two or three feet down, to get started; that's when you drive on top of the ground. But when you drive in the water you drive with what we call a jet.

Q. When you dig with a jetty that brings up the water and sand and everything, does it?

A. Yes, sir.

Q. You don't observe the character of that soil, do you?

A. You can tell by your jet.

Q. I say, do you observe the character of the soil down there?

A. I don't understand what you mean by "observe."

Q. Can you tell whether it is clay or sand?

A. Yes, you can if it's sand, you can see the sand boils up;

1240 and if it's clay, it's just color of the water.

Q. Did you ever dig any jetties or holes on Grassy Point?

A. Yes.

Q. And on Connors Point too?

A. Connors Point, yes.

Q. Now, do you know that the formation is just the same on both of those points?

A. Just about.

Q. Have you ever compared before, or have you ever thought before, whether the formation was just the same or not? Did you ever give that matter any thought or consideration until this afternoon?

A. I didn't understand that question.

Q. Did you ever give the matter of whether the formation of those two points was the same any consideration, or did you ever think about it until this afternoon?

A. Oh, yes, lots of times.

Q. And it is your belief that the formation is just the same, same kind of soil?

A. No, not in all places.

Q. It isn't in all places?

A. No, not in all places.

By Mr. Gard:

Q. At this Carnegie dock did you know of the concrete having to

be taken off of these piles and new concrete being put on because of its settling in the old channel?

A. Yes.

Q. Was that just in the old channel that that happened?

A. That's what they call the old channel, yes.

Attorney-General Owen: We offer Wisconsin's Exhibit number 1 in evidence.

We offer Exhibit number 52 in evidence.

Mr. Fryberger: Objected to as incompetent, irrelevant and immaterial.

1241 Attorney-General Owen: Exhibit number 52, being a topographical map of territory surrounding the head of the lakes.

The Commissioner: Received subject to the objection.

It is stipulated as follows:

First, that this hearing be adjourned until the 17th day of September, 1917, 10:00 o'clock in the forenoon, at the Federal Court-Room at Superior, Wisconsin;

Second, that at that time the State of Wisconsin shall resume, and continue putting in its direct evidence until it has got its direct evidence in;

Third, that immediately upon the conclusion of Wisconsin's case Minnesota shall enter upon its rebuttal, at Duluth, Minnesota, at the Federal Court-Room, which shall be concluded by the 1st day of October, provided Wisconsin shall not have used more than five days in putting in evidence on direct;

Fourth, Wisconsin shall conclude its sur-rebuttal by the 15th day of October, 1917.

1242 Rec'd October 5, 1917. D. E. Roberts, Commissioner.

SUPERIOR, WIS., MONDAY, Sept. 17, 1917.

F. G. RAY was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Attorney-General Owen:

Q. Mr. Ray, you are an attache of the Lake Survey Office of Detroit, Michigan?

A. Yes, sir.

Q. What does that office have charge of; what are the duties of that office?

A. It carries on operations under an appropriation known as survey of northern and northwestern lakes, and has charge of surveys and mapping of the Great Lakes and connecting rivers, and the boundary from the St. Lawrence to the head of Lake Michigan and Lake Superior.

Q. That is under the control and direction of the Federal Government?
A. It is under the War Department.
Q. Of the Federal Government?
A. Yes, sir.
Q. What position do you occupy in that office?
A. I am principal assistant engineer of the Lake Survey Office.
Q. And who is your superior?
A. Lieutenant-Colonel Alsteder.
Q. How long have you occupied your present office?
A. About seven years—about eight years.
Q. I will ask you if the document I now hand you is a part of the records of the office of the United States Lake Survey at Detroit, Michigan?
A. That is a map belonging to the files of the Lake Survey.
1243 Q. And what is that a map of?
A. It shows the survey of the St. Louis River, a portion of the St. Louis River in the vicinity of Superior Bay, made in 1861, under the direction of Captain Meade.
Q. I take it that that is what we have commonly referred to in this case as Meade map; that is what it is, isn't it, it is a map made by Colonel Meade?
A. It is a map made under direction of Colonel Meade, Captain Meade at that time, I believe.
Q. And that is the original map that is on file in your office?
A. It is.
Q. Of course, you do not want to leave it here in evidence?
A. No; that is impossible.
Q. I will ask you if Wisconsin's Exhibit 46-C and 46-D are photographic copies of that original map?
A. 46-C is a photographic reproduction of this particular map; 46-D is a reproduction of the second map of this series.
Q. Supplementing that?
A. Supplementing this one.
Q. I now hand you Wisconsin's Exhibit 53 and ask you what that is?
A. That is an enlarged photograph of a portion of the so-called Meade map, the one that I have in my hand.
Q. Now of what portion?
A. It is the portion of the St. Louis River in the vicinity of Grassy Point.
Q. Above Grassy Point?
A. Above Grassy Point.
Q. In other words, it is an enlarged photographic copy of all of Exhibit 46-C westerly of Grassy Point?
A. It is.
Q. What is the enlargement?
A. It was not enlarged to any pre-determined scale. The photographer was instructed to enlarge it as much as he could to show

plainly the work on the map. It is about two and one-
1244 quarter times the size of the original.

Q. And where was the copy made?

A. In the United States Lake Survey Office at Detroit.

Q. By photographers connected with the office?

A. Yes, sir.

Q. And under your direction?

A. It was made under my direction, yes, sir.

Q. Now this Meade chart shows a sand-bar or perhaps more properly speaking a narrowing of the main channel above Grassy Point, does it not?

A. Yes.

Q. Now, on the original Meade map there are various contour lines indicated, are there not?

A. There are.

Q. What different contour lines are indicated?

A. On the St. Louis River there are indicated the 6, 9, and 12-foot contours showing depths of 6, 9, and 12 feet.

Q. How are those lines indicated on the map?

A. The 6-foot contour is in red; the 9 in black; and the 12 in blue.

Q. What is the shallowest water indicated in the main channel of the St. Louis River above Grassy Point?

Mr. Fryberger: Object to that on the ground that the map speaks for itself.

Attorney-General Smith: Assumes a fact with regard to the existence of the channel as such that is not proven.

The Commissioner: Answer subject to the objection.

A. The map indicates that there is a continuous channel of a depth not less than 12 feet.

Q. In other words, the map shows continuous 12-foot contour lines from Grassy Point west?

A. It does.

1245 Q. Can you indicate in blue ink on Exhibit 53 where these lines run on that exhibit above Grassy Point?

A. I can, and will, if you desire it.

Q. I will ask you to do that.

A. (Witness marks on exhibit.)

(Another map marked Wisconsin's Exhibit 53, to take the place of exhibit last marked, and the exhibit marks on the first map erased by Reporter.)

Q. Instead of indicating 12-foot contour lines in blue, I ask you to indicate them in red, as red will produce a more striking and pronounced line than blue, on this exhibit, if you will?

A. (Witness marks on Wisconsin's Exhibit 53.)

Q. Now the lines you have drawn on Wisconsin's Exhibit 53, in red, are lines which on the original map represent 12-foot contour lines?

A. They are.

Q. And what depth of water does that indicate between those red lines?

A. It indicates something more than 12 feet.

Q. So that between these red lines there is at least 12 feet of water according to the map?

A. Correct.

Q. Of course, this photographic copy wouldn't reproduce the red and the blue lines on the original map?

A. No, sir; they produce black.

Q. All of the lines?

A. Yes.

Attorney-General Owen: We offer Wisconsin's Exhibit 53 in evidence.

The Commissioner: There being no objection, it is received.

Cross-examination.

By Mr. Bailey:

Q. Mr. Ray, this original map, I take it, shows all of the
1246 soundings that were made, does it not, so far as you know?

A. It does not show all of the soundings. There are more soundings taken than it will be possible to put on that scale map.

Q. I note that in one place here within your red line there is a 10 marked. That indicates a sounding, doesn't it, so that on this contour line——

A. Pardon me. Before I answer that I will have to refer to the original.

Q. Refer to the original. Go and look at it.

A. (Witness steps down from the stand, to desk, and examines the original map and also the copy of it.)

Q. That's right, isn't it, Mr. Ray?

A. There is a depth of 10 feet shown on the map between the 12-foot contours.

Q. So that these contours cannot necessarily mean that every place within the contour lines is at least 12 feet in depth?

A. These lines are intended to represent the 12-foot depth.

Q. Yes, but I say they can't necessarily mean that every place within the lines is 12 feet in depth, because the original map shows to the contrary; isn't that true?

A. There is a 10-foot depth shown there, and it is undoubtedly a mistake.

Q. You don't know whether it is a mistake or not, do you?

A. I know what these contours are intended to represent.

Q. All that you know is what the map itself shows, isn't it?

A. I know what the contours are intended to represent.

Q. I say, all that you know is what the map itself shows?

A. All I know about this particular survey.

1247 Q. And you are just guessing, as anybody else could guess, as to whether it is a mistake or whether it is accurate?

A. It is not called a guess.

Q. You are guessing when you said you thought it was a mistake, aren't you?

A. Very evidently a mistake—not a guess.

Q. A mistake either in the contours or in the depth, you think?

A. It may have been a mistake in the depth or a mistake in drawing the contour on the wrong side of the 10-foot——

Q. Now, you, I take it, haven't with you any figures on the sounding except such as appear on the map?

A. No, sir.

Q. And that is all that you know about that, is what appears on the map?

A. I have seen the original notes. I have never plotted them or checked the plotting.

Q. And you have never examined them particularly with reference to this section?

A. No, sir.

Q. So that you don't know that the original notes as to soundings show anything different than is shown on this map?

A. I do not, except I know that only a portion of the soundings are shown on the map.

Q. Now, as a matter of fact, if these soundings are accurate on this exhibit there is a line—at present I will just point to this exhibit without marking it—there is a line right there like this (indicating), is there not, which shows at least ten feet of depth?

A. The line which is indicated does show a depth of 9 feet.

1248 Q. I call your attention to Minnesota's Exhibit 54 which appears to be the same photograph as Wisconsin's Exhibit 53, and the red line which has been marked S-R on this map. That appears to show at least a 9-foot depth along the red line, does it not?

A. That red line indicates soundings of 9 and 10 feet, and it is a continuous line. There is nothing to indicate that there is fully 9 feet between.

Q. So that so far as any figures that you have available or know about there may be a continuous line at least 9 feet in depth along that red line?

A. There may be.

Mr. Bailey: I will offer in evidence Minnesota's Exhibit 54.

The Commissioner: Received.

Q. Isn't there on this original map, the so-called Meade map, a contour line at about the point right here (indicating), and within the 12-foot contour line, figures shown there of 5 feet in one place away easterly of Grassy Point?

A. The depth is 45, not 5.

Q. That is the only place in the whole course where there is a 4, isn't it?

A. I couldn't say.
Q. I mean, or where there is anything above 40?
A. Not carefully examining—as I see it now.

Mr. Powell: There is one of 48. There is 45. They are put on in the same way, a little out of line.
Mr. Bailey: May be I am mistaken about that. I thought it was a 5.

Q. You haven't any of these figures on soundings, in your head, outside of what the map shows, have you?
A. I have not.
1249 Q. You haven't made any examination as to whether there are other figures at any particular point, have you, as to soundings?
A. I looked for the notes of this survey in this particular locality and found some of the notes, just to determine the matter of soundings and get an idea of the number of soundings taken; that was all.
Q. But you didn't compare that with the figures on the map not make any examination as to any particular points, did you?
A. I identified two or three of the lines in that immediate vicinity. I did not attempt to plot them. I was simply verifying whether or not I had the right notes.
Q. Whether you had the right notes or not?
A. Yes, sir.

Mr. Hanitch:

Q. Mr. Ray, looking at the map which you have brought with you from Detroit and which you say is the original, is it a tracing of the original map or is it the original map?
A. It is the original map.
Q. Made by General Meade?
A. Made under the direction of General Meade; probably not by him personally.
Q. Looking at that part of the map which is designated as St. Louis Bay and is below Grassy Point or easterly of Grassy Point, could a boat drawing more than eight feet of water get through to a point above Grassy Point?
A. This map would indicate that it could not be more than eight feet down the course through St. Louis Bay.
Q. So that as far as navigation of the Bay of Superior,
1250 as far as boats coming from the Bay of Superior or from Lake Superior to upper St. Louis Bay was concerned, the draft was limited to eight feet, was it not, at the time this map was made?
A. This map would seem to indicate that.
Q. Well, now you say this map indicates that. All of your testimony is based on this map, isn't it?
A. Yes.
Q. And why would you be positive as to a depth above St. Louis

Bay and indefinite or at least not positive as to the depth below Grassy Point?

A. I believe I have testified in reply to each of the questions, that the map indicates so and so.

Attorney-General Owen: In other words, you have no personal knowledge except what you gained from the map.

The Witness: No.

By Mr. Hanitch:

Q. You didn't prepare the contour line?

A. No, sir.

Q. You had to do with the preparation of no part of this map?

A. No, sir; that map was made in 1861.

By Attorney-General Smith:

Q. Mr. Ray, you speak of this as the original. Isn't this one of an edition printed at that time?

A. No, sir; that is hand work. So far as we know, that is the original map.

Q. Have you never seen any other map like this?

A. I have not.

Q. And you understand that this was produced by a draughtsman about 1861?

A. Yes, sir.

Q. And that draughtsman at Washington at that time?

A. I believe that was made in Detroit. My recollection is
1251 that the Lake Survey had its office in Detroit that time.

Q. And your testimony is based on your supposition that this is hand work and not one of an edition of maps made at that time?

A. It is not an edition. It is an original map.

Q. Do you take it that more than one person worked on this map, or don't you know?

A. I know nothing about that.

Q. You are not posted as to whether or not the contour lines are prepared by the same person who prepared the soundings—completed the soundings?

A. I do not know.

By Mr. Bailey:

Q. Do you know how many feet apart the soundings were taken?

A. I do not. The notes indicated that the soundings were taken at regular time intervals.

Q. Regular what?

A. Time intervals.

Q. What do you mean by time intervals?

A. Every fifteenth second or ten seconds while the boat was passing between two signal points.

Q. Well, does that mean, then, that the soundings were taken not

at regular intervals in feet, if the boat didn't happen to be going at the same rate all the time but would be taken oftener when the boat was going slow and less often when it was going fast?

A. If the soundings were taken at time intervals, as I think they were, the distance between the soundings would depend upon the velocity of the boat.

Q. You don't know about how far apart, then, as a rule the soundings were taken?

A. In distance, I do not.

1252 Q. And so far as you know there are no other soundings in what you term the channel, than are shown on this map; that is, they were all put on so far as the channel was concerned?

A. No; there are a great many more soundings than are on that map.

Q. You testified that once before. I am asking you now about the channel. You don't know of any other soundings in what you term the channel, that are shown on this map, do you; they are printed thicker there than on other places on the map?

A. I will have to answer as I did before, that only a few of the soundings are shown there, in the channel or the shoal water.

Q. They are thicker in the channel than they are in the shoal water as shown on this map?

A. It is the usual practice in——

Q. You step down to the map to answer the question. Now answer it—not some usual practice—isn't that true?

A. Soundings are shown thicker in the channel than in some portions of the shoal water. I haven't examined the map thoroughly.

Q. You don't now know of any other soundings that were taken in the channel than those that are shown in what you call the channel, do you?

A. I know that there are other soundings than those shown in the channel, because the soundings were taken very much more frequently than could possibly be shown in that size figure on that scale map.

Q. Can you give us some idea as to how many feet apart they were taken?

A. I cannot.

Q. None whatever?

A. No, sir. My recollection—I did not go into this with the idea of testifying on it, but I did look at the notes, and my

1253 recollection is that the soundings in this vicinity were taken about every quarter minute. There is nothing to indicate what kind of a boat they had or what kind of population they had or what speed they were going, and that could only be determined by replotting the notes.

Q. I think you indicated that you didn't know when the contour lines were put on or by whom?

A. I do not.

Q. It is possible, I suppose, that the contour lines were put on after the map was made?

A. That is very unlikely.

Q. Well, I say it is possible?
A. It is possible.
Q. So far as you know,—is that right?
A. I can't testify in regard to that at all.

Redirect examination.

By Attorney-General Owen:

Q. Why did you say it was very unlikely?
A. That is a portion of the map, and I would feel very positive that the map was made as shortly as possible after the time of the survey.
Q. Made as an entirety?
A. Made as an entire map.
Q. And not as a matter of patch-work, piece-meal?
A. It is not at all customary, and I could hardly believe that that would be the case.
Q. You attempted to say something about the usual practice with reference to these figures in the shoal water and in the channel. You were not permitted to say what you had in mind, I think. I will ask you now to state what you had in mind?
A. The usual practise on hydrographic surveys of this
1254 kind is to take many more soundings than it will be possible to plot on the scale of map that is proposed, and when the map is made it is customary to select the characteristic soundings, and by that I mean the soundings to show the irregularities of the bottom, the deepest and shallowest points, and naturally in a narrow channel of this kind they would select the soundings more closely together to show the edge of the bank and the irregularities of the bottom.
Q. Attention has been called here to the fact that there is a number 10 within the 12-foot contour line. That is a manifest inconsistency, is it not?
A. Yes, sir, it is.
Q. And it is evident that either the presence of the number 10 there is an error or that the contour line is an error?
A. That is correct. The contour line should be outside of 10-foot soundings or anything less than 12 feet. In this case it is an error of some kind.
Q. You have had, I take it, a great deal of experience in making maps of this sort?
A. I am not a draughtsman. I never have made maps. I have directed surveys, had charge of both the office and field work.
Q. From your experience are you able to say whether the contour line or the figure 10 should be accorded the greater deference?

Mr. Fryberger: Objected to on the ground that that is a mere speculation that anyone could indulge in just as well as the witness can.
The Commissioner: You may answer the question.

1255 A. I would not like to choose between the two without going over the notes very carefully and checking the plottings. It may be an error either way.

Q. Referring to this red line marked S-R on Minnesota's Exhibit 54, the most that can be said for that is that it connects the soundings of not less than 9 feet, isn't it?

A. Yes, sir.

Q. And there is nothing whatever on that map to indicate whether a boat of 8-foot draft, for instance, could get from one sounding to another?

A. Repeat that question, will you?

Q. (Question read): "And there is nothing whatever on that map to indicate whether a boat of 8-foot draft, for instance, could get from one sounding to another?" I mean following this red line?

Mr. Bailey: You mean on the original map.

Q. Yes.

A. I believe there would be a natural presumption that a boat could follow that line, with 8-foot draft, for the reason, as I stated before, it is customary to select the characteristic soundings, and it would be natural and proper to select shoaler soundings if there were any in there.

Recross-examination.

By Mr. Bailey:

Q. What you have said of an 8-foot draft is equally true of the 9-foot draft?

A. No, I would not say so. On that map you can draw a line crossing the red line connecting 8-foot soundings.

Q. Likewise on what you term the channel you can draw a line connecting 6 and 9 feet too, can't you, across the channel?

A. That's correct. The channel is generally indicated by contour lines.

1256 Q. So you think that possibly on this line S-R on Minnesota's Exhibit 54, because you can draw a line across connecting 8-foot soundings, that perhaps 8 feet is as deep a draft as you could get through there?

A. I would say that the map doesn't indicate that there is greater depth than that along that course.

By Attorney-General Smith:

Q. You have compared some of these figures indicating the depth shown by the soundings with the field notes, haven't you, in this vicinity?

A. No, sir, I did not compare the soundings but I looked at the field books simply. I looked at the field notes to satisfy myself that we had the notes in the office and also to see in what form they were

and how the soundings were located and roughly how many were taken.

Q. And you came to the conclusion that the figures put on here were those which were characteristic of the vicinity in which those figures were found?

A. I did not verify it. That is simply a matter of practise to do so.

Q. Then your investigation of the field notes was for the purpose of determining whether this map was a map produced from those original field notes?

A. It was perhaps more the other way. I was merely looking to see whether we had the original notes of this map.

By Mr. Hanitch:

Q. Any boat coming from Lake Superior and going westerly up these waters, any boat that could cross the lower St. Louis Bay, could go up the channel marked S-R, could it not? As far as this map and this survey shows, Minnesota's Exhibit 54?

A. I believe so.

1257 By Mr. Bailey:

Q. Suppose that just the soundings shown on this Meade map had been taken. Would it be quite possible that an engineer might draw the contour lines just as they are shown on this map from such soundings? Please answer Yes or No.

A. Yes, it is possible.

1258 WILLIAM F. THOMPSON was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Captain?
A. In Duluth.
Q. How long have you lived in Duluth?
A. Since 1870.
Q. Where did you live before that?
A. In Australia.
Q. Have you lived continuously in Duluth since that time?
A. Yes, sir.
Q. What is your business?
A. Steam-boat captain.
Q. How long have you been steam-boat captain?
A. Since 1886.
Q. Do you hold a master's license?
A. Yes, sir.
Q. How long have you held a master's license?

A. I don't know just what year it was increased from a pilot's license to a master's license; I wouldn't say; must be 20 years, 15 or 20 years.

Q. You first held a pilot's license?

A. Yes, sir.

Q. When did you hold a pilot's license?

A. In '86.

Q. And that was afterwards increased to a master and pilot, was it?

A. Yes, sir.

Q. Have you been navigating boats continuously since 1886?

A. Yes, sir.

Q. What were you doing prior to that time?

A. Well, I was young. I was learning then to be a pilot.

Q. What boats have you navigated?

A. Quite a number, sir.

Q. Well, just mention some of them.

A. Well, I started in first boat I ever was master of, cap-

1259 tain of, was the Tug Nellie Cotton.

Q. How long did you operate the Nellie Cotton?

A. I was aboard of her 8 years but at odd times when the captain would be sick or at other business I would take the tug after I had a license.

Q. What did you first do on the Nellie Cotton?

A. I was cook.

Q. And what other position did you fill on the Nellie Cotton?

A. Everything.

Q. When did you start on the Nellie Cotton as cook?

A. Oh, I started in 1881.

Q. When did you become master of the Nellie Cotton?

A. In 1887.

Q. Who was operating her when you ran on her as cook?

A. Captain Jeffry.

Q. Was he operating her all the time until you became master of her?

A. Yes, sir.

Q. What kind of a boat was the Nellie Cotton?

A. Well, she was a little steel tug.

Q. Who owned her?

A. Peyton-Kimball & Barber.

Q. They operated the saw-mill on Connor's Point?

A. Yes, sir.

Q. How long did you operate the Nellie Cotton as a master?

A. That is only at short times, a week at a time at most.

Q. And in what years?

A. Well, I should judge it was along in '87.

Q. And what other boat did you operate along about that time?

A. The next year I sailed the Tug John McKay.

Q. What kind of a tug was that?

A. She was a small tug.

1260 Q. What did you do with the John McKay?

A. Towed logs up the St. Louis River, up and down the river.

Q. What was the Nellie Cotton doing when you were on her?

A. She was doing everything in the way of tugging.

Q. Principally what was she doing?

A. Towing logs.

Q. From where to where?

A. Well, she used to tow from above New Duluth down to the mill and we used to tow from as far down as Port Wing on the South Shore, round Two Harbors to Duluth, and towed scows and brick from the brickyard up at New Duluth, above West Duluth now, just this side of the iron steel plant; there was a brickyard in there and we used to tow brick down there.

Q. Where did you get most of the logs that you brought down the river?

A. Most of the logs came from up just above New Duluth up at the sorting gap.

Q. There was a sorting gap up above New Duluth?

A. Yes, sir.

Q. Above Spirit Lake?

A. Yes.

Q. How often did you go up there for logs with the Nellie Cotton?

A. That's hard to say. At odd times it would be blowing so we couldn't go out into the lake, Peyton or Barber would send us up the river after a raft, so as to keep us moving all the time.

Q. Was the Nellie Cotton engaged principally in towing logs?

A. Yes, sir.

Q. And can you give us some idea of the extent that you towed logs from up the St. Louis River in the '80's?

A. Well, it's a long while ago. I can't say just how many, but we used to go up there quite often, you know, and get a raft.

1261 Q. What course did you take above Grassy Point?

A. Well, it would depend upon what way the captain figured when we come down. If it was night we would come down the old main channel. If it was daylight we would come down through the cut-off if we didn't have a big raft.

Q. If you didn't have a big raft you would come through the cut-off?

A. Yes, sir.

Q. And in the day-time?

A. Yes, sir.

Q. Otherwise you say you would take the main channel?

A. Yes, sir.

Q. How does that main channel run above Grassy Point?

A. Well, it doesn't run now the way it ran then.

Q. That is, you mean the channel that the boat took doesn't run now the way it did then?

A. No, sir.

Q. And that main channel is still there, is it, that is, part of it?

A. Where it isn't filled up, it is, there.

Q. It has been filled up?
A. Some of it has.
Q. Does the Carnegie Coal-Dock and the Zenith Furnace Company Dock extend over that old channel?
A. Yes, sir.
Q. Above Grassy Point does it run near the Minnesota shore?
A. Yes, sir.
Q. The old channel, the old, main channel?
A. The original channel, yes, sir.
Q. That is it ran nearer than the dredged channel you speak of—the channel now?
A. Runs further north.
Q. Than the dredged channel?
A. Yes, sir.
1262 Q. You are familiar with the dredged channel?
A. Yes, sir.
Q. Know where it runs?
A. Yes, sir.
Q. And have navigated it?
A. Yes, sir.
Q. And this main channel that you took above Grassy Point runs north of that, you say?
A. Well, the one after you got around Grassy Point ran north.
Q. Yes. Does the new channel cross it some places?
A. Yes, sir.
Q. Do you know of an island in the vicinity of opposite the Zenith Furnace Company Dock?
A. Yes, sir.
Q. How does the main channel run with reference to that island?
A. The old original channel, or the new channel?
Q. The old original channel.
A. The old original channel was all of a thousand feet or more,—south of the old channel.
Q. Where does the dredged channel run with reference to that island?
A. The new channel cuts off some of the island now, runs right close alongside of it.
Q. To what extent did you navigate north of Big Island?
A. North of Big Island.
Q. You spoke of the cut-off, didn't you?
A. Yes.
Q. That is south of the Big Island?
A. Yes, sir.
Q. The other one is north of Big Island?
A. Yes, sir.
Q. To what extent did you navigate that channel north of Big Island?
A. I operated boats up there drawing 14, 15 feet of water, brought them down from New Duluth.
Q. When?

A. It is at the time, indeed I can't tell you the years with-
1263 out looking it up. It was when the New Duluth mills were running up there.

Q. Before 1896?

A. Somewhere around in that vicinity.

Q. What boats did you run up there that year?

A. Well, I had our own tug then, the R. F. Goodwin.

Q. How much water did she draw?

A. About eight feet.

Q. And what course did you take above Grassy Point in navigating that boat?

A. Well, I used to go either way.

Q. You mean the cut-off part of the time?

A. That is if it was a northeast wind and high water I would go through the cut-off.

Q. Otherwise what course would you take?

A. If the wind was southerly and the water low I would take the old deep water channel.

Q. That is the channel you have described that is partly covered now by the Zenith Dock and the Carnegie Coal Company Dock?

A. Yes, sir.

Q. Who showed you that channel first?

A. Captain Jeffry.

Q. On the Nellie Cotton?

A. Yes, sir.

Q. And that was in about '81 or in the '80's?

A. Why, in the '80's, yes, sir.

Q. Early '80's. And have you navigated it ever since more or less?

A. Yes, sir.

Q. Is that the channel that boats usually took in going north of Big Island?

A. Well, that is the only channel we could take if you drew over eight feet of water.

Q. Is that the channel that boats usually took when you went north of Big Island?

A. The old original channel?

1264 Q. Yes.

A. Yes, sir.

Q. There was another channel, you say, that went south of Big Island?

A. That was the cut-off.

Q. Yes. What boats used that channel?

A. Well, anything around seven or eight feet at the time of high water, would go through there. There was lots of water at the cut-off but after you got down about that flat island it was shoal. There is where the trouble was.

Q. Was the main channel marked in the summertime by grass or rushes?

A. Yes, sir, more or less.

Q. Pretty clearly defined?

A. Yes, sir.
Q. Now, what other boats have you navigated on the St. Louis River above Grassy Point than those you have mentioned?
A. H. B. Abbott, Joseph C. Suit, H. A. Root, M. C. Neff, and I operated several steamers up to New Duluth, the Kennastea, for one, and the Nico and the Rambler, the Tug Rambler.
Q. When did you operate the Rambler?
A. That was only for a short time.
Q. When?
A. That was the time when the Cloquet dam broke and came down, when the 80 million came down, whatever year that was.
Q. Is that in the '80's?
A. No; that was in the '90's.
Q. '90's?
A. No, that was in the '80's; it was in '89, I think.
Q. Now did you operate any other boat up the river in the '80's?
A. No.
Q. You named some boats that you had operated generally.
1265 Did you operate any of those boats in the '80's, any except the Nellie Cotton and the Rambler and that other——
A. John McKay.
Q. John McKay, yes.
A. No, sir.
Q. In the '80's it was just the Nellie Cotton, the John McKay, and the Rambler?
A. Yes, sir.
Q. What kind of a boat was the John McKay?
A. Small tug, drew 6 feet of water.
Q. You could go anywhere with her?
A. Go anywhere, had to go everywhere with her.
Q. In the '90's what boats did you operate up there?
A. Well, in the '90's I operated the Goodman and the Abbott and Suit, Kennastea; I wasn't master of her; I was just pilot on her, take her up and load her and bring her down; and the Nico.
Q. In the early '90's, what boats did you operate?
A. Well, I think what I operated in the early '90's was the Goodman.
Q. What kind of a boat was the Goodman?
A. She was a medium-sized tug.
Q. How much water did she draw?
A. She drew about 8½ feet of water.
Q. What were you doing with her?
A. Towing logs.
Q. From what place?
A. Well, we towed some logs and some——
Q. When you went up where did you go?
A. Went to New Duluth.
Q. And when you came down where did you get them from?
A. Well, we got them at different places. Some jobs got them along the bank and some would come from the sorting gap; different

places they would have them corralled, you know, in the
1266 slough, some of these sloughs, pull them out and take them down.

Q. Principally above or below Big Island?

A. Principally, above.

Q. How early was that in the '90's that you operated that boat?

A. It was right in the early '90's.

Q. '91, '2, or '3, along there?

A. Bought the tug in the spring of 1900—'90.

Q. In 1890?

A. In 1890.

Q. Then you operated her for some years after that?

A. Yes, sir.

Q. Continuously?

A. Continuously.

Q. Did you ever take the cut-off route with that tug?

A. With the Goodman?

Q. Yes.

A. Yes, sir.

Q. Generally or just occasionally?

A. Just odd times going through here, you know, just as it was convenient. If the raft was large and wasn't narrowed up we would go through the cut-off, or go around by Spirit Lake by Swenson's and the old main channel.

Q. And you traveled the channel then that you have spoken of here that is now covered by the Zenith Dock and the Carnegie Coal Dock, did you?

A. Yes, sir.

Q. You spoke of operating deep water boats, boats that drew 16 feet of water, didn't you?

A. Yes.

Q. That was along in the later '90's?

A. I should judge it was somewhere along there. I never kept track of the year. It was when Inman was operating the tug line. He got me to take him up there.

1267 Q. Did you take the same channel that you had taken when you went north of Big Island; did you take the same channel that way?

A. There was only one channel to take, sir.

Q. When you went north of the island there was only one channel?

A. Yes, sir.

Q. And that was the main channel?

A. Yes, sir.

Q. In recent years have you operated boats up the St. Louis River?

A. The last boat I took up there drawing any depth of water was drawing 14 feet. That was the time the Steel Company corporation built that bridge across there. I should judge that was six or seven years ago.

Q. Went into the dredged channel then, I suppose?

A. Yes, sir.
Q. Did you find a current in the main channel when you navigated the main channel, Captain?
A. The old original channel?
Q. Yes.
A. Sure there's a current there.
Q. Did that current extend down through Grassy Point—around Grassy Point, I mean?
A. Yes, sir; around in the deep waterway, which isn't there now at all.
Q. Were you ever up there early in the spring?
A. Yes, sir.
Q. Before the ice went out?
A. No, not before the ice went out.
Q. You were up there soon after the ice went out?
A. Yes, sir.
Q. Do you know whether the ice would go out of the main channel there before it would go out of the other part of the water up there?
A. I don't know about that.
Q. You didn't see it breaking up?
A. No.

1268 Cross-examination.

By Mr. Fryberger:

Q. Mr. Thompson, how much water did the Goodman draw?
A. She drew about eight feet of water.
Q. And how much the Nellie Cotton?
A. Well, Nellie didn't draw quite as much. When the Nellie was coaled up she would possibly draw eight about, on an average; probably draw about seven and a half.
Q. Now, you used to go up with these boats there south of Big Island or north of Big Island?
A. Yes, sir.
Q. I wish you would step down here and look at this map. I call your attention to Minnesota's Exhibit 1, being what is known as the Meade map, and I call your attention to these lines marked in red on this map and ask you in the first place, Do you recollect where Millford was?
A. Yes, sir.
Q. That is the channel marked H here, call it a channel for the purpose of these questions. You recognize that, do you? This is Grassy Point (indicating).
A. Yes, sir.
Q. This channel is marked H. Do you recognize that?
A. The direction the channel used to run?
Q. Do you know where Millford was?
A. Right up here (indicating). Where is Big Island? Millford was somewhere around in here (indicating).

Q. Where you were pointing is two or three miles from where Millford was, isn't it?

A. No, sir.

Q. A mile, anyway?

A. That's where the brickyard was, possibly.

Q. Well, wasn't Millford at a point to the easterly and northerly of the point marked C, instead of to the westerly of the point
1269 marked C? You notice where the point marked C is, don't you?

A. I see that mark there.

Q. You pointed on the map at least two inches to the westerly of the point marked C. You must be mistaken there, aren't you?

A. No, sir.

Q. Well, wasn't Millford to the northerly of the point marked C on this map?

A. No, sir; it was right up in here (indicating).. There used to be a brickyard in there (indicating).

Q. You were pointing to a point where you say Millford was at least two inches on the map, to the westerly of the point marked C?

A. Sure, yes, sir; the way it's marked there.

Q. Well, that's where you think Millford was?

A. Where I said the brickyard was.

Q. It has been some time, Mr. Thompson, since you have given these matters any attention?

A. No, I noticed in cutting these new channels there, I noticed it.

Q. When did they cut those new channels?

A. I don't know. I wouldn't say the dates when they cut them.

Q. You haven't given these matters any attention or thought lately until this lawsuit?

A. I never heard of this lawsuit till today.

Q. You haven't given these matters any thought for years, have you?

A. I have. I was sailing. I was up there last summer.

Q. Did you pay any particular attention where Millford was?

A. No, sir.

Q. There seems to be a great dispute between you and the other witnesses as to where Millford was. That is what I am try-
1270 ing to get at. Did you ever haul anything from Millford or to Millford?

A. No, sir.

Q. I want to call your attention to this red line on Minnesota's Exhibit 1 running from G to B and from B to D. Now is that the channel or the line that you took on this Nellie Cotton and the Goodman? Was it Goodman?

A. Goodman.

Q. Is that the line that you took when you took what you call the cut-off?

A. Yes, sir.

Q. You remember that channel well. Now, as a matter of fact, when you sailed with Captain Jeffry isn't it a fact that you went up

the channel innumerable times from G to B and B to C and then on up north of Big Island?

A. We never went this channel at all.

Q. From B to C?

A. No, sir.

Q. Don't you think that Captain Jeffry would know where he went when he was captain of the boat?

A. He ought to.

Q. Quite an active man, wasn't he?

A. He was, at that time.

Q. How long since you have seen Captain Jeffry?

A. I should judge it was two months.

Q. He is sick now in the hospital?

A. That's what I heard.

Q. Do you mean to say that you never went on the line, the channel marked B to C?

A. Well, I wouldn't say positive that we never went. He might have gone over that route when I was down in the cabin or some place else in the boat or down in the firehold; I wouldn't say we never went there.

Q. Showing the witness Minnesota's Exhibit 54. I call your attention to this line of soundings. You recognize this loca-

1271 tion by Grassy Point, do you not?

A. Yes, sir.

Q. The line of soundings coming up here marked between the black lines?

A. Yes.

Q. Eleven, ten, ten,—no place shallower than ten till you get out to the red line which is marked on this map S?

A. Yes, sir.

Q. Then follow the red line up to the point marked R and it shows——

A. Here's where we used to go (indicating).

Q. Wait a minute. It shows there there is no sounding less than nine and ten feet of water on that line?

A. Yes, on that line you got nine, too.

Q. There isn't any eight on there?

A. No.

Q. I just call your attention to the soundings there. There is nothing less than nine on that red line?

A. Sure.

Q. Coming down from R to the point marked S and then down between the black lines where there is nothing shown less than ten feet of water to the point off Grassy Point, that would be much nearer than going around what you call the old channel, wouldn't it?

A. Well, I don't know as it would.

Q. You don't know as it would?

A. No?

Q. Does it show on the map?

A. If you are going to make all these S's out of it, it wouldn't be

any nearer. It's all growed up here with bulrushes all the way along. This was all grass.

Q. There were no bulrushes growing in this channel that you went taking the cut-off?

A. No, sir.

Q. And there was no bulrushes growing in the channel marked S to R; isn't that true, in eight or nine feet?

1272 A. There's no bulrushes growing in eight or nine feet of water.

Q. So it was open water from the point marked R clear down to Grassy Point, wasn't it? Then you admit, as I understand it, that when you took the cut-off you did go up as far as—well, up this channel that is marked—just mark that again. Where is some red ink. We will mark that Z. You did go up that channel marked Z, in red ink?

A. Well, not as far as you have got it marked.

Q. Was there any reason why a boat drawing eight feet couldn't have gone right up on the channel marked S to R; I don't mean particularly on the red line, but I mean on this big broad expanse of water here that shows nothing less than eight feet?

A. I don't remember ever going that channel with Jeffry but I have been across that channel, picked up logs. I have been over that channel, but not with the Nellie Cotton. I don't say that I remember going through there with Jack Jefry through that channel.

Q. As a matter of fact, in the early days before there was any dredging done in what you call the main channel to the northerly of C, didn't all these boats drawing eight feet of water and less run along this channel from G to B and B to C and on up when they went north of the island?

A. I don't see why they should. We never did. We used to take the old channel over in here.

Q. When was that dredging done to the north of C?

A. I don't know. Mr. Bellinger could tell you.

Q. Was there any difference in the way you navigated after that dredging was done?

A. I never noticed any.

Q. Never noticed any difference. Did you ever take the

1273 channel marked E to F on Minnesota's Exhibit 1, this red line?

A. No, sir. I don't believe I ever went up that way; went up in here, though, (indicating).

Q. Now I will ask you about the current and the deep water in the cut-off south of the island. There was a very strong current there at times, was there not?

A. Sometimes.

Q. Just as strong a current in the cut-off to the southerly of Big Island as there was in the channel to the northerly; isn't that true?

A. Well, no; you see the current had to get started right down this way, and there was a loop-hole there, used to worm through there.

Q. It was a very strong current?

A. Nothing out of the way.
Q. Nothing out of the way in any current, is there?
A. Oh, yes.
Q. What do you mean by that?
A. Something that will pull your boat over to the bank.
Q. There was enough current there to float it?
A. Yes, sir, if you let go of her she would go right down in the gap.
Q. That is in the cut-off there?
A. Yes.

Redirect examination.

By Mr. Gard:

Q. Captain, step down here to the map, will you. You stated on your cross-examination that you have been over this line from B to C on Minnesota's Exhibit 1, when you were hunting logs or something of that kind?
A. I have been through there with the Tug Jeffry, which used to be the John McKay.
Q. How much water did it draw?
A. About six feet.
1274 Q. What was the occasion for your going through there?
A. This whole country was all full of logs and all up above Grassy Point, all full of logs.
Q. You were picking them up?
A. I was towing them after the lumber jacks picked them up, rafted them.
Q. Is that the only time you went through that place there?
A. I have been up around that country all the time, go through at odd times, you know. I was there all one season, up above the bridge there, up above Grassy Point.
Q. What were you doing?
A. Picking these logs up.
Q. You would go all over that water up there above Grassy Point with the boat?
A. We used to go right into the buirushes, into the grass and push logs out of the grass and back away with them, get them into the main channel.
Q. And that's what you meant when you said you had been over that course from B to C on this Minnesota's Exhibit 1?
A. Yes, sir.
Q. When you were huting logs?
A. Towing.
Q. When you were going up and down the river making a trip up the river or down the river from up the river did you take that course then?
A. No, sir.
Q. You then took the main channel you have spoken of?
A. Either took the cut-off or around the main channel.

Q. You spoke of a current in the cut-off there. Would there be any current after you got down past Big Island on the flats, on the cut-off?

A. It spreads out all over. There is a little current there,
1275 nothing to speak of. If there had been a good current all the way through it would have cut a good current by the flat island. The main current used to run around the mainland there on the Minnesota side.

Q. In the main channel that you have spoken of that you traveled?

A. That was the main current. It is there today. The new one cuts that off about there.

Q. Can't go on that old channel now, can it; that is below Carnegie dock?

A. No, the Blast Furnace Company and dock are right out over the old channel.

Q. That can't run through there, then?

A. No, sir.

Q. It comes down the dredged channel now, does it?

A. Yes, sir.

Recross-examination.

By Mr. Hanitch:

Q. You took the cut-off because it was shorter?

A. With the small boats, yes, sir.

Q. Well, you said you went up with an eight-foot boat, did you not?

A. Sir?

Q. Didn't you testify that you went up with a boat that drew eight feet?

A. Yes, sir.

Q. And the reason you took the cut-off was because the distance was less by going that way?

A. We had to always consider it; sometimes had a northeast wind you would have eight feet of water down by flat island; you could go over it easy; that was shorter to go that way.

Q. That was the reason you took it?

A. Yes, sir.

1276 Q. That is the reason you took it, because it was shorter?

A. Sure, it's shorter.

Q. Looking at the map again, Captain Thompson; come here and look at the map, if you will. Doesn't the red line marked E—referring to Exhibit 1, does not the red line marked E-G-B and C substantially designate the dredged channel as it now exists?

A. It is in that vicinity, yes, sir.

Q. Substantially?

A. Where is that flat island? There never was a channel around through here (indicating) that anybody took and there isn't there today.

Q. What channel are you pointing at?

A. This channel here.
Q. What is that designated?

Mr. Fryberger: E to F.

Q. I am asking you about the channel marked E, G, B, and C, asking you whether that channel isn't substantially the same channel that has been dredged out by the government?
A. That is the channel that is dredged out now, practically, through there.
Q. Through there, by the government?
A. I don't know who it was done by.
Q. Now, Captain, do you say that the channel isn't straighter and shorter than the channel which you have called the old channel?
A. It might be shorter.
Q. Isn't it straighter?
A. Yes, sir; it's straighter.
Q. Isn't it a better channel?
A. Well, I should judge it is.
Q. And if you had the depth of water, that is the channel you would use naturally, isn't it?
A. Yes, sir, it is the straight channel now.
1277 Q. And if you had a width in that channel which was very much more than you had in the old channel, would you not say that the natural course to pursue or the natural channel to take would be that channel if it had sufficient water?
A. Steam-boat men always figure on taking the best channel.
Q. And the best channel is the widest channel and the straightest channel if it has the depth of water?
A. If it has the width and depth that is the channel he is going to take.
Q. Looking at Minnesota's Exhibit 54, what is there about this channel which is marked Z and S-R which does not show that it is straighter and shorter than the old channel?
A. Why, I don't dispute that.
Q. You don't dispute that?
A. No; he asked me to tell where the old channel was.
Q. And isn't there sufficient water in that channel for the boats that you were using?
A. There was three times the water there now, the boats we were using.
Q. Yes, but prior to the present dredging of the channel was there not sufficient water according to this Exhibit 54?
A. No, there wasn't at all times.
Q. Look at it.
A. No; them soundings might have been taken when there was high water.
Q. Might have been taken when there was high water?
A. Might have.
Q. Might have been?
A. Yes, sir.

1278 Q. You are assuming now that this was taken when there was high water?

A. No, I didn't. I say it might have been.

Q. Assuming it was taken when it was low water do you see any soundings——

A. I know the water that it used to be through there. You couldn't get along here (indicating).

Q. You are now pointing to the cut-off channel?

A. Yes.

Q. But I am drawing your attention to the channel which is marked on the map Minnesota's Exhibit 1 marked on that map as E, G, B, and C.

A. Small boats used to take that channel.

Q. Isn't there depth enough of water for your 8-foot boat?

A. Yes, sir, where you got that marked up it is.

Q. Couldn't you have a straight channel there that would give you 8 feet?

A. You could probably steer a straight channel through there.

Q. Assuming that this Minnesota's Exhibit 4 is a correct representation of the channel, why would a boat drawing 7 or 8 feet of water swing around to the old channel, as you describe it, when they had a broad, straight channel?

A. A boat drawing 8 feet of water you can't run her in 8 feet of water at any gait at all. You can crawl over it but you can't get any speed or get anywhere. It's a good deal better to go around to this water and make ten miles an hour than to go along here about two miles and a half.

Q. You mean that the Nellie Cotton drew 8 feet of water standing or running?

A. Standing, when she had her coal on.

Q. That's your testimony?

A. Yes, sir, when she was filled up.

Q. How much would she draw when she was running?

1279 A. She would squat right down.

Q. How much?

A. Eight or ten inches.

Q. The other boat that you said you ran that drew eight feet, did you mean that was when she was standing?

A. Yes, sir.

Q. So she drew more water than the Nellie Cotton?

A. Yes, sir.

Q. You say you could use the cut-off?

A. Yes, sir, we used to crawl along over that place. We have got water enough there to float her. A boat won't run in water she will float in.

Q. What occasion was there to go up the cut-off, if you had to crawl?

A. Suppose you had some boomsticks——

Q. You testified you always used the cut-off when you were with that boat alone, didn't you?

A. No, sir.

Q. I understood you to say that. You now say you didn't use the cut-off with the Nellie Cotton and the Goodman when you had nothing to tow?

A. Oh, I won't say that. If the wind was northeast and the water high we could duck right in there, but if you take ordinary water like it is now, haven't had much rain, we wouldn't bother that channel because we would be bumping along going up and down all the time, hitting the bank. That is, if you were trotting her right along.

Q. Wouldn't you be trotting along when you had nothing in tow?

A. Sure, if you have got a foot of water to spare, you won't hit.

Q. About how much of the time did you use the cut-off?

A. We used to go through there just at odd times, but usually, why, we never was—unless it was night-time, we came around the main channel.

Q. Did you have any trouble getting as far as flat island
1280 on this channel that went to the cut-off?

A. No, not as long as we kept where we had the channel. It was marked out with the grass from flat island down to——

Q. Do you now testify that you used the old channel, as you have described it, down as far as flat island and then cut across and took the cut-off?

A. Oh, no; oh, no.

Q. What channel did you use as far as flat island when you were going to take the cut-off?

A. We used to go up that channel that is marked there. You have got it marked red there.

Q. Did you have any trouble getting as far as the flat island?

A. No, sir, not as long as we kept in the channel. That channel was eight or ten-foot channel you got there.

Q. Well, how much water did you have in that channel?

A. I never sounded. We had water enough as long as there was——as we were towing something and going along slow you can crawl along over six or eight inches of mud.

Q. Do you mean now to testify that in that channel as far as flat island you had to crawl?

Mr. Gard: What do you mean by that channel?

Q. He knows. Don't you?

A. Sure I know what channel you mean.

Q. The one we marked there Z. Do you now testify that in that channel you had to crawl along?

A. At spots, yes, sir, you would hit the bank, hit the bottom.

Q. Hit the bottom?

A. Sure.

1281 Redirect examination.

By Mr. Gard:

Q. You have testified to something, I believe, every boatman knows, and that is that when you run over a bottom that comes close to your keel it will impede the speed of your boat?

A. Yes, sir.

Q. And that is true to a very great extent?

A. As soon as you get near the bottom she will squat and she will squat deeper than she would in deep water.

Q. And that is the reason you took the main channel above Grassy Point there?

A. Oh, well, I will tell you. When we went up there we were either towing some boomsticks up or loads down or scow.

Q. Which way?

A. Either way. Sometimes take scows up there with lumber and logging outfits and bringing down stuff. Went up there for sand and gravel.

Q. In the main channel the bottom of your boat didn't come very close to the ground, did it, in the main channel?

A. The old original channel?

Q. Yes.

A. No, not as long as you kept in the channel and had good water.

Q. Was that an advantage in keeping in the main channel and taking the main channel course?

A. Well, just as we wanted to go along, I told you. Sometimes if we wanted to hurry down and trot her along we took the main channel.

Q. You could travel in what is now the old channel, what you call the main channel, better than you could the other way, couldn't you?

A. Sure.

1282 Q. Your boat would make better speed?

A. Certainly, wouldn't go anywhere near the bottom, wouldn't pull the bank right after her.

Q. When a boat runs over shallow water the water will pull up at the stern, won't it?

A. Yes, or whenever she gets in a narrow channel and goes at any speed she will drag out on the banks.

Q. That pulls down the speed, doesn't it?

A. Certainly does. That is why the Government has got signs up all along in their channels different places, about six miles an hour; tugs go along, boats go along full gait they would wash the bank right in again.

Re-cross-examination.

By Mr. Hanitch:

Q. What did you do about the narrow places in the old channel, or were there no narrow places?

A. Yes, sir, there was some places.
Q. Where were they?
A. Well, I can't say just right off. They were along the channel. We knew where they were. They were probably showed up by the grass.
Q. How narrow would they be?
A. That, I never measured.
Q. Were they narrow enough for you to slow down?
A. No; we used to trot right along.
Q. No place narrow enough to pull——
A. Oh, yes, we used to pull the bank. We used to pull the banks and wash logs off the banks; after we had gone by our surf or swash go up there and pull them off.
Q. How many such places were there?
A. I wouldn't say. There were a few of them.
Q. Do you know where they were or do you recall now?
A. I don't recall just the very spots where they were.
1283 Q. Would you say about where they were?
A. No, I wouldn't, without looking them up.
Q. Are you as sure about the location of Millford as you are about this old channel?
A. I never took anything to Millford or brought anything away, but I was always told where Millford was.
Q. Same parties who told you where Millford was told you where the channel was, didn't they?
A. Yes, sir. I was eight years with that man.
Q. How?
A. I was eight years with him.

Mr. Fryberger: With Jeffry?
The Witness: Yes.

Q. And you think now, according to your best recollection, that your location of Millford is just substantially as correct as your location of the channel?
A. I might be a trifle, or it might be a little bit lower down toward the Blast Furnace.
Q. There wouldn't be any substantial change in the location, would there?
A. I never figured that.
Q. What is your answer to that?
A. I say it might be a little nearer down to where the furnace is now than where I put it.
Q. It wouldn't be very much?
A. I wouldn't say. It might be either way.
Q. There wouldn't be any substantial difference in the location would there?
A. Millford was always, I understood it, where the brickyard was. Brickyard, I always understood, was at Millford.

1284 By Mr. Fryberger:

Q. Did you notice any difference in what you call the old channel, in the depth of water after 1893, to what it was before 1893?

A. After 1893?

Q. Yes; did you notice any difference?

A. Than what it was before that?

Q. Yes.

A. I never went up before that time with a deeper boat than eight or nine feet of water.

Q. I didn't ask you that. I asked you if you noticed any difference in the depth of water in the old channel?

A. Afterwards I went up with a bigger boat and I didn't notice any difference. There was spots there they cleaned out.

Q. Then, as I understand it, you never noticed any difference between the depth of water before or after 1893, so far as you were concerned?

A. I would notice the difference if I had the same boat or if I had taken up a deeper draft boat.

Q. I asked you if you ever noticed any difference before or after 1893. Why don't you answer the question?

A. What kind of a boat?

Q. I don't care what kind of a boat; any kind of a boat. Did you notice any difference?

A. Did I?

Q. Yes.

A. Well, I can't answer, because you won't tell me what depth or draft it was drawing.

Q. What do I care what depth of a boat you had. I don't care what kind of a draft boat you had. Did you ever notice any
1285 difference in the depth of water in what you call the old channel before or after 1893?

A. With what draft of water?

Q. I don't care. I am asking you if you noticed any difference?

A. I would want to know the draft of water.

Q. Did you know that they did any dredging there in 1893 in the old channel?

A. I don't know where they dug it, but they did some cleaning up there.

Q. What time?

A. I don't know when.

Q. Do you know whether it was '92 or '93?

A. No.

Q. Do you know whether it was '91 or '94?

A. I know it was done.

Q. Just answer the question.

A. I didn't keep track. I couldn't keep track. You couldn't keep track of where they dredged these channels.

Q. Do you know whether it was '89 or '95?

A. '89?

Q. Yes, '89 or '95?

A. It wasn't in '89.
Q. Was it in '95?
A. It was somewhere probably around there.
Q. But you don't remember?
A. No, sir, I don't remember the year, no, sir.

1286 AFTERNOON SESSION, Sept. 17, 1917—2:00 o'clock p. m.

GEORGE E. MANN was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live?
A. I live at 219 Pittsburg Avenue, Duluth.
Q. How long have you lived in Duluth?
A. I lived in Duluth ever since 1890.
Q. What is your father's name?
A. Jacob Wesley.
Q. Is he the owner of the boat called the Merryman?
A. Yes, sir.
Q. What kind of a boat was that?
A. That was built for a ferry boat. Boat about 65-foot keel, I should judge; about 12-foot beam; and I guess carried around from 75 to a hundred passengers.
Q. Where did you run on that boat, the Merryman, in 1890?
A. I started in firing on the boat first. I fired until I got my experience, then I ran the engine later on.
Q. And your father owned the boat?
A. Yes, sir.
Q. Did he run on the boat himself?
A. Yes, sir.
Q. Was he the master of it?
A. He was late years. He wasn't for several years, though.
Q. Did you later run on another boat up the river?
A. Yes.
Q. What boat was that?
A. I made trips up there on the A. C. Adams, and Inman owned the Adams at that time, and another tug that I was up there
1287 on, the Frank C. Barnes, used to tow cedar up there.
Q. How much water did the Barnes draw?
A. The Barnes drew about 8 foot 6, I believe, around that; possibly 9 feet; 8 foot 6.
Q. How much water did this other boat draw?
A. The Adams?
Q. Yes.
A. It drawed about 9 foot 6, I should judge; pretty deep draft tug.
Q. When did you travel up there with these boats, the Adams and——

A. Well, it was about 1895, I should judge, when I was up there with the Adams.

Q. Do you know what course the Merryman took above Grassy Point when you were running on the Merryman?

A. Why, it took a northwesterly direction after it made the turn at Grassy Point going towards the Blast Furnace; northwesterly direction, I should judge, and gradually turned and went more of a westerly direction after it got near the Blast Furnace and across the Blast Furnace.

Q. Did it keep a course pretty close to the Minnesota shore above Grassy Point?

A. Yes. That is, of course there was rushes and bulrushes and such as that; I don't know what you call the shore like; that's near Grassy Point. After you passed Grassy Point you couldn't go so near the shore there on account of rushes and bogs like, but you get around near the Blast Furnace you came nearer to the shore.

Q. Did the Merryman run in the same channel that these other boats that you speak of ran later, the 8 and 9-foot boats you speak of?

A. Yes.

Q. In the same channel that they took?

A. Yes, of course, getting out to where this boat laid, of
1288 course it didn't lay in the main channel, but this was a light draft boat, and as soon as they got out to the deep water they always preferred the deep water to run in, so they took the deepest channel.

Q. Was it called the main channel?

A. Yes, sir; it is called the main channel.

Q. Do you know where the newly dredged channel is?

A. Well, I don't know much about that dredged channel. I have been up the river, though.

Q. Since the new channel was dredged?

A. Yes, but I couldn't state much about the channel. I didn't pay much attention to it. I had my family with me. I was out for just a ride up the river and didn't pay much attention to the direction of the channel.

Q. What was the Merryman doing up the river above Grassy Point in the early '90's?

A. She would take out picnic parties and she would be chartered out by the day, probably two or three days a week, or something like that. She didn't make any regular trips unless she was hired by the day at that time.

Cross-examination.

By Mr. Fryberger:

Q. How many feet did the Merryman draw?

A. Drawed about 4 feet and a half, I should judge.

Q. Well, you could go almost anywhere on upper St. Louis Bay with that boat, couldn't you?

A. Oh, yes, a good many places, anyway.

Q. Was there any particular reason why you should go in any deep channel?

A. Why, yes; you can make better time with a boat by being in deep water; the water drags along——

1289 Q. Do you mean to say that it makes any appreciable difference with a boat drawing 4 feet of water whether it is in 9 feet or 19 feet?

A. Well, 9 feet would be sufficient.

Q. Now, what is your business?

A. Engineer.

Q. Where are you working?

A. I work for different real estate companies here in Duluth.

Q. In the buildings?

A. Yes; that's what I am following now. Marine engineering business is what I have followed for several years.

Q. How long have you been working in the buildings?

A. Oh, about six years.

Q. What did you do prior to that time?

A. I followed the marine work.

Q. How long were you firing on the Merryman?

A. I should judge I was on there about three years.

Q. Firing?

A. Yes. Then I got a special license after that.

Q. To act as engine man?

A. Yes.

Q. Then you ran the engine?

A. Yes.

Q. For how long?

A. Oh, I guess about possible two summers.

Q. You started in 1890?

A. Yes, sir.

Q. Three years you acted as fireman?

A. Yes, sir; I don't think I put in quite two years following engineer but it was more than one summer, anyway.

Q. Then you quit the Merryman?

A. Then I quit the Merryman.

Q. What did you do then?

A. I started firing again.

Q. Where?

A. On the A. C. Adams.

Q. Tug?

A. Yes. I didn't have the required experience on that

1290 one boat. I wanted to work on other boats so as to get a better license.

Q. Then you never had much of the running of the boat at all?

A. I didn't run it, no, sir; only ran the engine.

Q. It was no part of your business to find the channel or anything of that kind?

A. Oh, no.

Q. Step down here to this map, if you will please, Mr. Mann, and I call your attention to Minnesota's Exhibit 1. Now do you

recognize on this map Grassy Point. That is marked Grassy Point there. You recognize that, do you?

A. The map looks kind of peculiar to me.

Q. Do you see Grassy Point marked there?

A. Yes.

Q. Now do you recognize that as Grassy Point?

A. Where is the main land?

Q. This is Minnesota on this side. Here is Grassy Point. This is Wisconsin on this side. Here is lower St. Louis Bay and around in here is upper St. Louis Bay and here is the island. Now do you recognize Grassy Point there coming down from the Minnesota side? This is going up the bay. Here is the old entry and there is the Duluth Canal. Here is Superior Bay, Rice's Point?

A. Where is the West Duluth draw-bridge?

Q. The West Duluth draw-bridge would be down about here (indicating). I just want to have you located yourself in a general way?

A. If the West Duluth draw-bridge is somewhere around here (indicating).

Q. What I am trying to get at here, I want you to get
1291 down to this line marked red, A to G, G to B, and B to C. Do you know enough about a map to attempt to tell us what line you took at that time or have you had any experience with maps at all?

A. Well, not a great deal.

Q. Do you know whether or not you ever took this line when you went up the bay, marked from A to G, G to B, and B to C?

A. The map don't look plain enough to me to understand the map.

Q. Did you ever take the short-cut—cut-off?

A. Yes, sir.

Q. Frequently take the cut-off?

A. Yes, I have a good many times with light draft boats.

Q. Firing?

A. Yes.

Q. Gone up there on the Adams?

A. Never took the cut-off with the Adams; couldn't possibly get through there with that tug.

Q. How do you know; did you ever get stuck with it?

A. I have sounded a good many times along there and I know there wasn't water enough.

Q. How large a boat would you use to get through the cut-off?

A. Right where the cut-off leaves the main part of the river, what I considered the main part of the river, is sufficient water there for most any tug till you get by what they call the Devil's Elbow, and after you get down where the bay begins to widen out, why, you haven't got sufficient water for a boat that draws over 7 feet of water, without touching the bottom.

Q. Do you know whether you ever went up the channel marked B to C? Look at that map. Let's see if you can tell us. That is, the red line marked from B to C?

1292 A. I don't know.
Q. Didn't you ever go up the line marked B to D?
A. B to D?
Q. Yes; the red line marked B to D?
A. Not with a steam-boat.
Q. With any kind of a boat, Merryman or anything else; what is your best judgment?
A. No, I don't think so, because I think there is shoals in there.
Q. So shoal that you couldn't get across with a boat drawing four feet?
A. Yes.
Q. Now we will take the line marked from A to G and from G to B. Did you ever go up that with the Merryman, or was that too shallow?
A. No. I think there is a shoal runs along here some place that you couldn't follow that.
Q. On that line from G to B you ran across a shoal where you couldn't get over with a boat drawing 4 feet and a half or 4 feet? As a matter of fact, you don't know where you did go when you went up that river?
A. Yes, sir, I can show anyone where I went.
Q. Have you been up there lately?
A. No, I haven't been up there lately.
Q. It was never any part of your business to run the boat, that is, to select the channels?
A. No, that wasn't my part of the work.
Q. And you never were called upon to do that, were you?
A. No.

1293 H. C. BELLINGER was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Mr. Bellinger?
A. Duluth.
Q. How long have you lived in Duluth?
A. Since 1871.
Q. What is your business?
A. U. S. Inspector, Engineer Department.
Q. Harbor inspector?
A. Yes.
Q. For United States Government?
A. Yes, sir.
Q. How long have you held that position?
A. 1980.
Q. Since 1890. What were you doing before that time?
A. Surveys.
Q. For what?

A. Part of the time parties in Duluth.

Q. Is that your business, surveying?

A. Part of it yes, sounding, surveying, locating; principally surveying.

Q. What is the title of the office you serve?

A. Inspector, United States Inspector.

Q. United States Inspector for what?

A. United States Engineer's office.

Q. And what is your business; what are your duties, I mean?

A. Making soundings in wintertime, locating wharves, docks, shore line, see that the harbor rules and regulations are enforced, looking up evidence in regard to violations.

Q. Have you been on boats up the St. Louis River?

A. I have.

1294 Q. Above Grassy Point?

A. I have.

Q. When was your first experience on boats above Grassy Point?

A. Oh, along in the early '90's; I should judge '93 to the present time; possibly before that. What do you mean by my experience on boats? Do you mean working on a boat or riding on them?

Q. Riding on them; going up there for any purpose, first.

A. Possibly before that. I think I rode the river on the old Merryman, a little tug going up to the mills to New Duluth; but that was not in the line of work; just pleasure trip.

Q. Did you know of dredging being done in the main channel of the river up there in about 1893?

A. Yes; there was dredging done at that time.

Q. Do you know whether or not that dredging was done in what was then the navigated, generally navigated channel?

A. Yes. There was some bars, what we call bars, at that time, at different points, and they obstructed navigation to some extent and they were removed by dredges, and these bars were from a point opposite the south of Spirit Lake down to, possibly to where the Carnegie dock now possibly is; different points, the exact locations I don't remember.

Q. Do you know the channel that boats usually took in the St. Louis River above Grassy Point along in the early '90's?

A. I knew the ones we went. I knew the channel that I usually ran up on.

Q. What was it?

A. It was what we called the main channel; the main northerly channel; the one along the Minnesota side of the bay was the one we usually took.

1295 Q. Is it the channel that is now obstructed by the Zenith dock and the Carnegie dock?

A. It was.

Q. Was that known as the main channel of the St. Louis River?

A. So I took it, yes.

Q. Were you up that channel frequently?

A. During '95 I was; I was up there considerable during that year.

Q. And some before that?
A. Yes, some; I wouldn't say just how much.
Q. Some in 1890?
A. Well, possibly as early as that. It's so long back I don't remember. I know we went up, as I said before, probably to take a oat. There was some towing done out of the upper river. I knew the captains and used to ride with them at different times but not to exceed five or six times, possibly, that I went up there, except when we would go up in small boats and they would go anywhere.
Q. You have been through the cut-off, I suppose?
A. Yes, I have been through there.
Q. This main channel that you took was when you went northerly of Big Island.
A. Yes, when we went on the main channel we went northerly of that; cut-off channel was south of that.

Cross-examination.

By Mr. Fryberger:

Q. Mr. Bellinger, you don't know how many times you were up the river prior to 1895?
A. No, I don't.
Q. You had no business up there prior to that time?
A. Yes, I had.
1296 Q. When did you next have business up there?
A. Before 1893?
Q. Did you have anything to do with the dredging that was done in 1893?
A. Yes.
Q. The records will show, won't they, just when you had to do with it—records in the Duluth office?
A. Well, I think possibly they will, yes.
Q. What did you have to do with the dredging in 1893 there at that point?
A. I think we—In 1893 I think we were cutting some bars and setting out some ranges. We had some inspectors on the dredges and I would assist them at different times.
Q. You assisted as a sub-inspector assistant?
A. Yes, I assisted in setting out the ranges. We had inspectors and sub-inspectors. Each dredge had two inspectors usually.
Q. Prior to that time 1893 you had no business up the river at all?
A. No.
Q. When you went up you went up as the guest of a captain or something of that kind, for pleasure?
A. Yes, sir.
Q. Then you knew nothing about the channels prior to 1893 except what you happened to see when you occasionally went up the river?
A. Yes, what anybody would know if they observed to see where

they were going; didn't make any soundings or anything of that kind.

Q. Did you know there were several channels there in supper St. Louis Bay above Grassy Point that were used by boats?

A. I didn't know there were several. I knew there were two.

1297 Q. When did you find out there were two?

A. When I made the trips up there. I went once across what they called the cut-off, on the Steamer Merryman, and that is the first time I knew a boat could go through that way, except the small boats.

Q. What year was that?

A. I don't remember; it was in the early days.

Q. You just went up on an excursion?

A. Yes, sir.

Q. Pay your fare?

A. Possibly I did; I don't remember.

Q. You said you were a surveyor. Did you graduate from any school of surveying?

A. No, sir, I did not.

Q. These inspectors that inspect dredging are not surveyors or engineers in any sense of the word?

A. Some of them are.

Q. Very few of them?

A. I don't know; I am not qualified to say.

Q. They take a man for an inspector, any man, without any previous qualifications, of good sense, can act as inspector, can't he?

A. He can on some work.

Q. On dredging?

A. Depends on the kind of dredging. Some times he can and sometimes he can't.

Q. You never had charge of any engineering project here; you don't mean to say you were an engineer?

A. I don't claim so.

Q. Did you ever have charge of any surve-ing for the Gove-nment?

A. Yes, sir.

Q. What surveying have you done?

A. Made soundings.

Q. You call that surveying?

A. I do.

1298 Q. Did you run lines, have the transit?

A. Yes, sir.

Q. Did you do the transit work?

A. I do it, yes, sir.

Q. You do their transit work for the Government?

A. I do it, some part of it; I don't do it all.

Q. I call your attention to Minnesota's Exhibit 1. Now, did you ever go up this channel from A to G, G to B, and B to C?

A. Is this A here?

Q. This is A here.

A. No, I don't know as I have gone that way. I think I have

gone from A to B and B to D. This is the Devil's Elbow, A to B, and B to D.

Q. You have seen this map before today, haven't you, or some one of these?

A. I think possibly I have.

Q. You went over this with Mr. Gard before you went on the stand?

A. No, sir.

Q. Did you ever know of any boats going up the channel A to G, G to B, and B to C?

A. No, sir.

Q. Never knew that the water was deep enough so that a boat drawing 8 feet could go up there?

A. No, sir, not from B to C.

Q. You don't know whether it was or not?

A. I don't know.

Q. You never heard of a boat going there?

A. Not to my knowledge.

Q. What experience did you have on the dredging of the new channel up there?

A. That dredging was, I think that was under Assistant Engineer Dever. He had as his assistants, I think, Mr. Wadsworth and Mr. Taylor. I was an inspector looking after various dredges in the harbor, assisting other inspectors and putting up their ranges;
1299 leaving them at times and looking after other work.

Q. Were you with the inspector in charge of that work above Grassy Point?

A. No.

Q. Do you know whether you worked there any of the time when they were dredging the new channel?

A. In 1895 I did.

Q. In 1895?

A. Yes, sir.

Q. Is that when the new channel was dredged?

A. No, I think that was in 1900; I think that was about the time.

Q. I am asking you about when the new channel was dredged?

A. About 1900.

Q. Yes, and 1902. Did you have anything to do with that?

A. Well, I wouldn't be positive whether I did dredge up there at that time or not. I was up there, because I had business up there, but I don't believe that I was on a dredge looking after the immediate work on that channel—that straight channel.

Q. Then you had very little to do with that dredging in 1900 to 1902?

A. Yes, I don't claim I did.

Q. Then you had very little to do with the dredging in 1903, if anything?

A. I had as much as any of the men had, I think, in regard to looking after that work.

Q. But you can't tell where the bars are that you dredged out?

A. Yes, I can tell where some of them are.

Q. Not where all are?
A. Not where all are.
Q. You thought you dredged down as far as the Carnegie dock?
A. Yes; I think we did some there. There is some right opposite Spirit Lake.
1300 Q. I am not asking about Spirit Lake. I am asking if you dug some down as low as the Carnegie dock?
A. Possibly about that; I can't tell exactly.
Q. As a matter of fact, you didn't do any within a quarter of a mile of that?
A. Get a map. Get a map where we did some dredging; can't tell much about this map.
Q. This is Meade's map, Minnesota's Exhibit 1. I call your attention to the soundings here to the westerly of Grassy Point, way up starting in here with 25, 29, 24, 25, 22, I guess nothing lower than 20, till you get around up here to the northerly of C. Now the Carnegie dock wasn't anywheres near any shoal water, was it?
A. That's indefinite. If I could get a map——
Q. This is the map that's in evidence. Let's talk about this map. Let's not talk about some other map.
A. If you can locate the Carnegie dock on there——
Q. Tell us whether or not there was any shoal water near the Carnegie dock—there is nothing less than 20 feet.
A. I don't know where the Carnegie dock is on this map.
Q. You can't tell?
A. No, not exactly. If you can tell me where it is I can tell you about the depth of water. There was no Carnegie Dock when this map was made.
Q. Where the Carnegie Dock now is what was the depth of water?
A. Well, from 4 feet to 21 feet.
Q. Now do you know that this map was made from a survey in 1861 by Meade, showing that there is not less than 20 feet anywhere around where the Carnegie dock now is?
A. I don't know any such thing.
1301 Q. You don't know any such thing?
A. No, sir, I do not, because that Carnegie dock runs out into deep water. There is 4 feet where the Carnegie dock is and there is also 20 feet.
Q. Right in what you call the channel, was there 4 feet of water?
A. No, not where I called the channel. Don't call the channel 4 feet of water.
Q. Did you dredge anywhere except in the channel in '93 and '95?
A. No.
Q. Then what made you say that there is four feet of water where the Carnegie dock was, if you knew I wasn't talking about that?
A. Because the Carnegie dock is in shoal water as well as in deep water.
Q. It extends out from the land on the Minnesota side?
A. Yes, sir.
Q. Did you do any dredging around the Carnegie Dock in '93 and '94?

A. No, Carnegie Dock wasn't there.

Q. Did you do any dredging around where the Carnegie Dock now is, in '93 or '95?

A. I wouldn't be positive. It was up in that vicinity. If I could get a later map I could tell something about it.

Q. If you did any work up there at all, why is it you can't remember where you did the work with reference to this Carnegie Dock?

A. There was some work done in the channel opposite to 58th Avenue West. Now where that 58th would show on this Meade map, I don't know.

Q. You never saw that Meade map before, did you?

A. I think I have seen it over in the office there; I have showed it to several.

1302 Q. Now, you have never navigated any boats on the upper St. Louis River, have you?

A. Yes.

Q. What boats have you navigated?

A. Navigated the Steamer Sargent and the Tug Ontario.

Q. Have you a master's license?

A. Special license.

Q. When did you run these boats?

A. Ran boats at various times during the last ten or twelve years.

Q. When did you commence and what was the first boat?

A. I had assisted the captain of the Tangent wheeling the boat up and down the river at various times during the past eight or ten years.

Q. When did you next——

A. I don't know when I next——

Q. What year was it?

A. About approximately 1907 and '8.

Q. Who owned the Tangent?

A. United States Government.

Q. Who is the man that was running it?

A. Hibbard.

Q. Was he always on board when you were there?

A. Usually, yes; yes, I guess he was.

Q. How did you assist him?

A. Sometimes he would have occasion to leave the wheel and I would take the wheel, run up and down, wheel the boat up and down.

Q. How often?

A. Well, possibly every day that I would spell him off.

Q. How many trips?

A. We used to run up there a couple of times a week, some weeks; wouldn't run in there some weeks; ran up there several times along 1895.

Q. 1895?

A. Yes, we was up there a good deal.

Q. What other boat did you help wheel?

A. The Nemadji.

1303 Q. Who was the captain of that?

A. At the present time?

Q. No, at any time.

A. Well, we have had Captain Lindsey, was one captain; Captain Knowlton; and he was followed by Captain Ness.

Q. You helped all these fellows wheel?

A. Yes, and for a time we didn't have a captain and I——

Q. Who was the captain of the Tangent?

A. Captain Hibbard, was captain for a while, and Captain Wood, I believe his name was.

Q. How much water did the Tangent draw?

A. I think she drew about 4 feet and a half, I should judge.

Q. Go most anywhere?

A. Go most anywhere.

Q. What would the other one draw?

A. She drawed about 5 feet.

Q. Didn't require very skilled navigator to run these boats on the bay, did it?

A. No, it didn't; it don't require a skilled navigator to run in the bay.

Q. It was no part of your duties as Government Inspector, to navigate boats?

A. Yes, I have navigated boats.

Q. When?

A. This summer.

Q. This past summer?

A. Yes.

Q. You were running a boat this summer?

A. I have been.

Q. What boat did you run this summer?

A. Nemadji.

Q. This one that you have spoken of as drawing 5 feet?

A. About 5 feet, yes.

Q. Is that your first experience running a boat this summer?

A. Oh, no.

1304 Q. Did you run the Nemadji all summer?

A. No, sir.

Q. Well, what was your experience on it?

A. I wheeled the Nemadji a great many times and had charge of her when we didn't have any captain; and I took the boat and did our work with it, and had charge of the boat.

Q. But all the time you were an inspector?

A. I am still an inspector.

1305 JOHN MORGAN was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Captain Morgan?

A. Well, I live in Cleveland, Ohio.

Q. You are here visiting your son?
A. Yes, sir, and a couple of daughters.
Q. Have you ever lived here at the head of the lakes?
A. Yes, sir, lived here eight years.
Q. When?
A. About two years ago.
Q. When did you first come to the head of the lakes?
A. In 1865.
Q. What is your business, Captain?
A. Well, I sailed about 37 boats in my life, been sailing boats, well, for the last 40 years.
Q. That is your business, is it, sailing boats as master?
A. Master.
Q. How long have you been sailing boats as master?
A. Well, about 39 years.
Q. Where have you sailed boats?
A. Out of Buffalo, of Duluth, and out of Detroit, Michigan.
Q. To what extent have you sailed boats at the head of the lakes here?
A. Oh, I sailed some little boats here. I sailed the Hammond a couple of years in 1889 and '90, running up the river here, towing stone.
Q. The Hammond?
A. Yes, sir, the General Hammond.
1306 Q. What kind of a boat was that?
A. She was a boat built for the Erie Canal and bought in Buffalo by a man named Chambers and brought up here, her and the Bardon and three or four other boats.
Q. You sailed her, you say, in 1889?
A. And '90.
Q. Up the St. Louis River hauling stone?
A. Hauling stone to Number 1 slip in Duluth.
Q. That is from Fond du Lac?
A. From Fond du Lac to Quimby and Ingals in Duluth.
Q. Number 1 slip is over near Lake Avenue?
A. Yes.
Q. In the vicinity of the canal?
A. Yes, sir.
Q. Did you run up the St. Louis River all of the seasons of 1889 and '90?
A. Yes, sir.
Q. On the Hammond?
A. On the Hammond.
Q. As master?
A. As master.
Q. Did you run part of the next season on there or not?
A. The next season I was on two different boats.
Q. What boats were you on the next season?
A. In '91 and '92 I was in the George P. Savage towing logs for Mitchell & McClure, from the Pokegama, I think they call it, down to the St. Paul & Duluth bridge into the boom there.

Q. What boat was that, you say?
A. The George P. Savage.
Q. What other boat have you navigated up the St. Louis River?
A. Oh, I used to take the Odin up and down there sometimes.
Q. What was the Odin?
A. She was a little barge. She carried gravel here to Superior; she carried the first gravel that went on Tower Avenue.
1307 Q. That was about what time?
A. Now, let's see. I think I have got a memorandum. She was owned by a man at Fond du Lac.
Q. Built at Fond du Lac, wasn't she?
A. Yes, built at Fond du Lac; a Norwegian built her. That was in '92, a part of '92.
Q. How much water did she draw?
A. Oh, about 6 feet and a half or 7 feet.
Q. How much water did the Hammond draw?
A. About 7 feet, hardly that.
Q. How many trips did you make up the St. Louis River with the Hammond hauling stone from Fond du Lac to the slip number 1 in the vicinity of the canal at Duluth?
A. Do you mean in a day?
Q. How often did you go up?
A. Well, I would make a trip and a half in a day; sometimes two trips if the weather was good. Bring down a load and go up and probably get down about halfway or such a matter, depending on the weather, and some days I would make two round trips, but I would be coming down in the night then.
Q. Sometimes you made two trips a day running at night?
A. Sometimes, by running at night, yes, sir.
Q. And did you keep that up all the two seasons there?
A. Yes, sir. We was very busy all the time.
Q. Was there anyone else hauling rock from Fond du Lac or not?
A. No, sir, nobody.
Q. At that time?
A. Not at that time.
Q. And you hauled all the rock down, then, from Fond du Lac that came down?
A. Yes, sir.
Q. Those two seasons?
A. Yes, sir.
1308 Q. They were used for building purposes, were they?
A. Yes, sir; Quimby and Ingals was doing the building in Duluth.
Q. Now, have you navigated any other boats up the St. Louis River?
A. No, nothing to speak of; just the George P. Savage and the Hammond and the Odin, you know, just as I told you; that's all.
Q. How long did you navigate the Odin?
A. Oh, well, that wasn't a steady thing; that was only occasionally I went up with the Odin. Our work was mostly done down here, you know; I carried gravel from Gooseberry River to Tower

Avenue all one season with the Odin, but I occasionally used to go up to Fond du Lac; sometimes had something to go up there and the man used to live up there who owned her and didn't have much to do with her up there; bring up something.

Q. What route did you take after you passed Grassy Point going up?

A. Oh, kept right up the main channel.

Q. The main channel?

A. The old channel, yes, the main channel.

Q. Were you up there a few days ago?

A. Yes, I went up a trip on the Chicora.

Q. That is an excursion boat?

A. Yes, sir.

Q. When did you take that trip up there?

A. Last week.

Q. You say you navigated the main channel?

A. Yes, sir.

Q. Was that the channel that was generally navigated by boats?

A. There wasn't any other channel at that time. There was a cut-off, you know, but there was only about between 5 and 6 feet of water going up there, and of course you couldn't go up and down there very well; wasn't water enough, see?

1309 Q. Did you ever go the cut-off route?

A. Oh, when I went in Mitchell & McClure's boat I did. She was a light draft boat, that Savage, and we used to go up there to the Pokegama.

Q. And that was the cut-off route part of the way?

A. Yes, that was the regular cut-off.

Q. Did you ever take the cut-off route through the Devil's Elbow?

A. Oh, lots of times, but not with any deep draft boat.

Q. Did you ever take the cut-off with the Hammond?

A. No, sir, not with the Hammond.

Q. Did you ever with the Odin?

A. No, sir.

Q. But you did with the Savage?

A. Yes, with the Savage.

Q. Now you say you traveled what is called the main channel?

A. Yes, sir.

Q. Above Grassy Point?

A. Above Grassy Point?

Q. Is that channel obstructed at the present time?

A. Well, it's not there any more, the old channel; they have built across the old channel. I suppose may be, oh, probably 7 or 800 feet clean across it entirely.

Q. That is the coal dock——

A. Take it from the Blast Furnace and the other is put across the channel, I don't know what you call it.

Q. They are across the channel that you navigated in '89 and '90?

A. Yes, sir; they are across the channel, entirely across it.

Q. The boats generally took that channel that went around the northerly side of Big Island?

A. Well, I—Yes, they didn't—any boat that drew any water did; a launch could go down the other way or some light draft
1310 boats, but the boats all took that channel.

Q. Did you find a current in that channel above Grassy Point?

A. Oh, yes, sure, a current; sometimes it would come up and down; it would run up and down again just depending, you know, on the wind and tide and one thing and another.

Q. Was that channel marked by weeds?

A. Marked by weeds when they growed up. You could run right along the bulrushes just as well as you could buoys, and better, in fact, after the bulrushes got up.

Q. Did you go up there in the spring before the bulrushes came up?

A. Oh, yes.

Q. How did you find the channel then?

A. Oh, I found it; I never got aground. I managed to get along all right.

Cross-examination.

By Mr. Bailey:

Q. Was there only two channels that you knew anything about?

A. Only two channels. I don't know how many channels they got there now.

Q. I am talking about the time you were navigating up there in 1889 and '90?

A. There wasn't any two channels.

Q. There wasn't?

A. No.

Q. How many were there, one?

A. One.

Q. Just one?

A. That is all.

Q. Sure there was one?

A. Yes, I am sure.

Q. Certain about that, are you?

A. Yes.

Q. But you used to go sometimes what you call the——
1311 A. Went the main channel all the time.

Q. And then you used to go the cut-off?

A. Not till I was in the Savage.

Q. You went the cut-off, did you?

A. I had to go there to get to the place where I towed the logs.

Q. But you didn't consider that a channel?

A. Well, no, it wasn't at that time. There wasn't water enough, that you could call it a channel in my estimation.

Q. I think you said there was 5 feet?

A. No, there wasn't.
Q. Was there 4 feet?
A. Well, there was 4 feet, but you know the water raises about 18 inches.
Q. Did you ever take any soundings up there?
A. Yes, lots of times.
Q. Where?
A. Oh, on the south side of Grassy Island.
Q. That's what is known as Pancake Island?
A. No, no, Grassy Island. Big Island, that cut-off you speak of goes around Big Island.
Q. You were talking about Grassy Island; where is that?
A. Grassy Island, small little island not much of it left. They have dug two-thirds of it away. That is just out at the end of that dock that runs out from the Blast Furnace; that's Grassy Island.
Q. That is where the new channel goes?
A. That is where the new channel goes.
Q. Which side of that island was it you took the soundings?
A. On the south side in order to get a channel for to go up to the Pokegama.
Q. I thought you said there wasn't a channel there?
1312 A. In order to get some kind of a channel to go up there.
Q. I thought you said there wasn't any?
A. Well, there wasn't any.
Q. But you took the soundings just the same?
A. I took soundings and put up buoys.
Q. What was the shallowest place?
A. About 5 feet.
Q. I thought you cut it down to four a litle while ago?
A. Well, sometimes it was four too.
Q. Did you get any 3 in that channel?
A. Three fathoms—or, three feet?
Q. Yes.
A. No, I don't think I did.
Q. The shallowest, then, was 4?
A. About 4 feet, yes.
Q. What did you say the Savage drew?
A. Sir?
Q. How much did you say the George P. Savage drew?
A. About 5 feet of water.
Q. And that dragged the bottom, did it?
A. Dragged the bottom.
Q. A boat that drew any more than that couldn't get through at all?
A. No, couldn't get through there, not at that time.
Q. I am talking about that time?
A. Well, that is what I am talking about.
Q. A boat that drew 6 couldn't get through?
A. No.
Q. You were just there those two years?
A. Two years.

Q. 1889 and '90?
A. Yes.
Q. Now just step down here a minute, will you. Have y
looked at this Minnesota's Exhibit 1 before?
A. No.
Q. Have never seen that?
A. No.
1313 Q. Now you see Grassy Point here, don't you?
A. Yes, I see Grassy Point.
Q. Did you ever know of a channel that ran around the l
A, E, F, close to the Wisconsin shore; did you ever know th
A. No.
Q. This red line A, E, F, did you ever know a channel the
A. I don't remember.
Q. Is this the channel you went on, this A, G, B, C?
A. Can't tell anything about that.
Q. Well, calling attention to Minnesota's Exhibit 54; you
Grassy Point here, don't you?
A. Yes.
Q. Now you see down here about where you got through
the south side of Grassy Point; you locate yourself that way, do
you?
A. Show me where this dock is going out from this furnace
Q. Never mind about the dock. Here is Grassy Point.
A. I see.
Q. Here is the south end of Grassy Point?
A. Yes.
Q. Which way did you start after you got by there?
A. I don't know.
Q. Assume that this place over here with little stars in is t
Grassy Island you told about.
A. That's not Grassy Point.
Q. Where is Grassy Point?
A. I don't understand that map at all. I have got a map
these rivers that's altogether different from that. I can han
the other chart of St. Louis River that I have got, but this h
is all new to me. I can't go nothing by that.
Q. Just assume that this is Grassy Point here on this Mi
1314 esota's Exhibit 54 and assume that this little thing th
appears to be an island, with some little stars in it—
that Grassy Island? Where did you go with reference to th
Grassy Island?
A. I don't think that's Grassy Island; don't look like it to m
Q. Where do you think Grassy Island is on this map with r
erence to Grassy Point?
A. I can't tell anything about that.
Q. Have you got your map here that you speak of?
A. No.
Q. Where is the map you say you can locate yourself by?
A. Over in Duluth.
Q. Why didn't you bring it along?

A. I didn't want to bring it along. I didn't think it was necessary.

Q. How close to this little Grassy Island did you use to go when you went north ot it?

A. Well, about a thousand feet; we left that Island a thousand feet on the port side of us, at least.

Q. When you were going south of the island——

A. Going to the westward or eastward there; didn't matter much.

Q. Where you were going south towards the cut-off, how far did you go from that island?

A. Oh, within a hundred feet. That is going up on the south side of it.

Q. Well, you took always the straighest cut you could?

A. Took the deepest water we could get.

Q. What?

A. The best water, you know.

Q. The best water and the straightest course?

A. Well, of course, always do.

Q. How?

A. Always do, you know.

Q. And that is the way you went with the Odin and with the——

1315 A. Yes, and with the Hammond.

Q. And wherever you could get a straight course and over 6 feet of water that is the way you went with these boats?

A. Yes, sir, that's right.

Q. Now was there only one place westerly of Grassy Point when you were going north of Big Island that didn't have reeds in it after the reeds had gotten up?

A. What did you say?

Q. You said there was only one channel there. I said was there only one course that didn't have these bulrushes or reeds in it, as you went from Grassy Point up north of Big Island?

A. Oh, didn't have rushes there all the time, you know.

Q. I say, after the rushes got up?

A. After the rushes got up we didn't take that cut-off till——

Q. I am not speaking about the cut-off, but going northerly of Big Island; when you went from Grassy Point northerly of Big Island was there just one course?

A. Just one course.

Q. That did not have rushes in it?

A. Yes, you had rushes on the starboard side going up all the time; that is, after they started to grow.

Q. I say, was there just one course that didn't have these rushes?

A. You don't steer any course on the river, boss; that's out of the question.

Q. No course on a river?

A. No, not that kind of a river.

Q. Was there just one channel that didn't have rushes in it?

A. The main channel had rushes in it after the rushes
1316 grew in the spring, and after that you wouldn't have much trouble following the shore because of the fact the rushes growed right along the bank and you could follow them right along, keep going night or day.

Q. There wasn't any rushes right where the boat went?

A. Not where the boat went, no.

Q. But there was rushes all over that body of water there except this course that your boat took?

A. Well, on the starboard side there was rushes; there wasn't any on the port side.

Q. By "port" you mean the right-hand side?

A. I mean the left; on the left-hand side is the port side.

Q. Left-hand side as you were going ahead?

A. Yes.

Q. There weren't any on that?

A. No.

Q. None at all?

A. (No response).

By Mr. Fryberger:

Q. Where did you say you lived?

A. Cleveland, Ohio.

Q. Are you running a boat now?

A. Not just now; for the last three or four months.

Q. Have you been sick?

A. Yes, been sick.

Q. You are sick now?

A. I ain't very well; pretty weak.

Q. And haven't been well?

A. I have been ailing for about three or four months.

Q. What is your age?

A. About 69.

Q. Now, how long has it been since you sailed up this river here?

A. About 20 years, about 21 years.

Q. That is, since you quit?

A. Since I quit here in Duluth.

Q. What year was it you quit?

A. Well, now, I couldn't exactly tell you, but I know
1317 that it is—the reason I say that time, I had a girl born that year I left here and she is 21 year old. That is the way I have got that figured.

Q. What year would that be, in '93 or '94?

A. It's 21 years ago; you can count back.

Q. I want you to give me the year?

A. I can't give it to you.

Q. You can't figure that out?

A. I could figure it out if I wanted to. I could count backwards and get it, I guess; it's just 21 years ago.

Q. But you couldn't tell what year it was?

A. Well, not exactly.
Q. Who did you first talk to about this lawsuit?
A. About what lawsuit?
Q. This lawsuit.
A. I didn't talk to anyone about it.
Q. How did you men know that you knew anything about this channel, if you do?
A. There is fellows here that knows me in town, and they said I was here, and the first thing I knew there was a man come and said they wanted me over here. I haven't any interest in the thing and there is nobody said anything to me in regards to this affair any more than they found out I was in town and knew I was sailing that Hammond and one thing or another; I don't care anything about it.
Q. Was there any dredging done up this river during the time you were there?
A. No, sir, no, sir.
Q. None whatever?
A. None whatever.
Q. There was no dredging done prior to the time that you
1318 left here?
A. Not a bit.
Q. Twenty years ago?
A. No; no dredging done up around that way?
Q. When did you first commence to go up the river?
A. Let's see; 1889.
Q. In '89?
A. In '89 and '90; it was those two first years.
Q. How long did you continue to go up?
A. It was about three years going up and down there three summers, three seasons, you know.
Q. Is that all that you ran up there?
A. That is all.
Q. I thought you ran boats up there for eight years?
A. No, I lived in Duluth eight years, I said.
Q. What did you do the other——
A. Sailed boats all the time I was in Duluth.
Q. But you didn't run up the river?
A. No, not up the river. I sailed the fire tug one year, sailed a little steam barge, sailed a schooner for Henry Truelson one year.
Q. What was that, a fish boat?
A. Not a fish boat, no; a little sailing vessel, the Henry Truelson.
Q. How many feet did that draw?
A. She didn't go up the river.
Q. I didn't ask you that.
A. All right. She drew about eight feet of water, light.
Q. You stated, as I understand you, that if you had plenty of water you always took the shortest course?
A. I don't remember making the remark.
Q. Well, is that a fact?

A. No, sir, it is not a fact.

Q. Now I want to call your attention to a photograph of
1319 the Government map made by Captain Meade in 1861?

A. I know him by reputation. I have got his name on a lot of charts.

Q. Look at this exhibit 54 and I want you to look at this channel around Grassy Point?

A. Yes, I see that.

Q. Now I want you to look at this channel marked Z in red and running up here off of Grassy Point, 11 feet, 10 feet; these are the soundings; 10 feet, 10 feet, running up here to a point marked S. Then we have a red line running up to 11, and I take it that this space is several hundred feet wide where there is no sounding less than 8 feet from S to R. Do you know of any reason why any one of the three boats which you said you operated there couldn't go up that channel where there is nothing less than from 8 to 9 feet the entire distance?

A. Well, they must have dug it out since I went there.

Q. Do you want to say that this map and these soundings that were made by Captain Meade, that has been offered in evidence, is not correct?

A. I guess it's all right.

Q. Do you see that there was 8 feet of water, not less than 8 feet of water up this channel I have called your attention to?

A. The main channel?

Q. Not the one you call the main channel; this is the one that runs to the north of this Grassy Island. Do you want to say that there wasn't at least 8 feet of water in that channel?

A. To the north of Grassy Island?

Q. Yes, to the north of Grassy Island.

A. That would be in the main channel, boss.

1320 Q. Is that the channel that I am calling your attention to, what you call the main channel?

A. The main channel is on the north side of Grassy Island.

Q. Is this channel marked Z and then from S on to R running to the north of Grassy Island, is that the channel which you call the main channel?

A. I don't know; I don't understand that map at all.

Q. What is there about this map that you don't understand, if you ever did run a boat up there?

A. I don't see the thing the way it looks to me at all.

Q. Well, what's wrong with it?

A. There's a hundred and one things wrong.

Q. Well, give me one of them?

A. I can't see anything about it that I can understand.

Q. You can see all right, can't you?

A. Yes.

Q. Can you figure?

A. A little.

Q. Did you have any trouble in figuring?

A. No.

Q. Tell us. You are here to try to aid us in giving the Court some information and yet you back off every time we show you a map, and don't know anything about it. You are used to maps?

A. Yes, sir.

Q. And know what soundings mean?

A. Yes, sir.

Q. I want you to take this channel and try to give us some information about it?

Mr. Gard: Object to this. The witness has stated that he
1321 did not understand this map.

Q. I am going to see whether he does or not. I am not going to leave this channel until I get an answer as to your opinion, at least?

A. What do you call this, looks like land; what's that (indicating)?

Q. We will call that between these black lines, we will call that the main channel.

A. That looks better to me.

Q. I want you to explain this, why you couldn't go up here with these boats drawing 7 feet, 5 feet, 7 feet and a half, up this channel marked Z to the north, why you couldn't go up that channel to the north of Grassy Island instead of going away around here in what you call the main channel?

A. There wasn't any other place you could go, only in the main channel, when I was here.

Q. Now then, from '89——

A. I know. You have told me that before.

Q. I will tell it to you again, too. From 1889, for three years, you never knew of boats going up this channel Z and then from S to R north of Grassy Island; do you want to tell us that?

A. I didn't say north—Grassy Island is all right but that don't—Read the question.

Q. (Question read.)

A. Speaking of this line that you have got, I can't get on to that job. Now I will tell you, if it will do you any good——

Q. I don't know as it will. I will ask you the question.

A. Go ahead; you will get tired.

Q. I think I will. I am pretty tired now. Now you say
1322 that you don't know anything about this channel marked Z on Exhibit 54 and it doesn't mean anything to you to look at it.

A. Do you call this Grassy Island?

Q. That's what we call it; you said it wasn't.

A. It don't look like it to me. Is it marked Grassy Island?

Q. No; first time I ever heard it called Grassy Island.

A. Now this looks all right to me for the old channel in there.

Mr. Gard: He points to what is shown there as the old channel.

Mr. Fryberger: There is nothing shown as the old channel.

A. That's what it looks like to me and I can't look at anything

else that seems anywhere in line with my ideas. I can get aboard of a boat right now and take her from Duluth up to Fond du Lac and back again and take her the old channel, that is, except what they took away from the old channel.

Q. Did you ever know of any boats using this channel marked Z instead of what you call the old channel?

A. I can't answer that because it don't look right to me.

Q. Don't look right to you at all?

A. No.

Q. Did you know of those soundings in there to the north?

A. No, I did not.

Q. Nine and ten feet?

A. Nine and ten feet.

Q. Nine and ten feet on that red line?

A. I see a ten-foot mark there.

Q. Did you know of those soundings?

A. No, sir.

Q. You didn't know there was such deep water in there?

A. No, I didn't.

1323 Q. Never heard any mariner say there was such deep water in there?

A. No, I used to take lots of them up there.

Q. That is fellows that couldn't get along without your help?

A. Couldn't get along without my help; and pulled them off a lot of them on Sundays when they were coming down.

Q. That is this channel marked Z?

A. I wouldn't swear to that now. That's in the channel where——

Redirect examination.

By Mr. Gard:

Q. I forgot to ask you—You went up the St. Louis River in the '60's, didn't you?

A. In '61.

Q. On what boat?

A. In '65. I was just sailor that time before the mast. That was in the Marian Hulbert. She was a Government schooner under command of John Webb. He was the Indian agent at Bayfield at that time.

Q. How often did you go up on the Government boat?

A. Just once, that one trip, and went from there down to Grand Portage and paid there, and back to Red Cliff and paid there, and we went to Bayfield, just made the trip; that's 51 years ago.

Q. Mr. Webb was the Indian agent?

A. Yes, sir.

Q. He went to Fond du Lac to pay the Indians?

A. Yes, sir.

Q. Now, on looking at Minnesota's Exhibit 54 you said, you pointed out this way and said that looked to you like the main channel?

A. Yes, sir.

Q. Now I want that marked here so that it shows. I am going to

mark that H. (Mr. Gard marks on Exhibit.) When you
1324 said that that looked like the main channel you meant this channel that is marked H here in red ink, didn't you?
A. Yes, sir.

1325 G. W. WARD was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live?
A. I live at a place called Cohasset, Minnesota.
Q. How long have you lived there?
A. Nine years.
Q. Did you ever live at the head of the lakes here?
A. Yes, sir.
Q. How long?
A. Well, I used to live at Duluth. I lived there and made it my home, that is head of the lakes outside of on boats, on Park Point from 1881 till 1889.
Q. What is your business?
A. Steam-boating.
Q. When did you first begin steam-boating?
A. I began in '76 first, steam-boating.
Q. What place?
A. Buffalo, New York.
Q. What were you doing?
A. Firing; sometimes act as engineer, stand my watch, handle the engine, do my own firing. Sometimes we would go out on the lake; anybody would want me to take the wheel I would take the wheel and come into port with schooners.
Q. What experience have you had in steam-boating at the head of the lakes?
A. I started in the spring of '81.
Q. Doing what?
A. Making occasional trips to Fond du Lac.
Q. On what boat?
A. Minnie Lamont.
Q. What kind of a boat was the Minnie Lamont?
A. She was in the neighborhood of about 45 to 50 feet, what you call an open boat; that is, there is a little canopy up over it.
1326 Q. Who was running it?
A. It was Peterson owned her at that time.
Q. What were you doing on her?
A. Anything and everything.
Q. What positions did you fill?
A. Well, I was supposed to fill wheelsman and linesman; that is, tend to the lines and assist with the wheel.
Q. What was the Minnie Lamont doing?
A. She was towing scows from Fund du Lac to Superior entry and

Duluth with what you call riprap, that is refuse of the stone quarry that is filling in among big rock, used as filling like.

Q. How often did she make trips up the St. Louis?

A. Sometimes once a week, sometimes twice, and then may be it would be two weeks before she would make another trip.

Q. How long did you run on the Minnie Lamont up the St. Louis River?

A. Counting the time during the whole season, figure I would put in about a month.

Q. Equal to a month's steady running up and down the river?

A. Well, it wasn't steady. I went on as an extra hand or else took another man's place there, the fireman or his linesman.

Q. Did you run on the Minnie Lamont more than one season?

A. Well, I have been on her off and on that way for two or three seasons.

Q. After '81 or——

A. After it.

Q. The first season was '81?

A. The first season was '81.

Q. Then was it '81, '2 and '3?

A. I think I made not over two or three trips in '83.

1327 Q. But you were going up and down the St. Louis River in '81 and '2?

A. Yes.

Q. And a little in '83 on the Minnie Lamont?

A. Yes, sir.

Q. Was she still hauling riprap?

A. Well, she engaged in most anything and everything. Peterson had the contract for to furnish rock for the piers and for this what you call the opening, the sand barrens on Minnesota Point with rock; that was got over in near Twelfth Avenue West. We used to run in there what we used to call near the lime kilns now. There used to be a little bridge and we ran it out with wheelbarrows that rock; ran it out with wheelbarrows over the St. Paul & Duluth tracks.

Q. Is that below the Grassy Point?

A. That's right down here in Duluth. It's in Superior Bay.

Q. Did the Minnie Lamont do anything up the St. Louis River except haul stone down, that is, above Grassy Point except hauling stone down?

A. Oh, occasionally a small raft of timber or logs, something like that, in little odd jobs. And the reason they engaged the Minnie to go and get this riprap, she had to go out a little further to get it than any of the other deeper boats could go, on account of the St. Louis being so shallow there.

Q. What other boats did you run on up the St. Louis River?

A. I have been on what was called the—two or three trips; I wouldn't be positive of the number of trips—on the boat called the Pridgeon at that time.

Q. When was that?

A. That was in '82 and '83.

Q. What was she doing up the St. Louis River?

1328 A. She was taking the Minnie's place to haul this stone scow.

Q. What boat did you next——

A. The next one I was on was the Rambler.

Q. What kind of a boat was that?

A. That was a tug come up from Tonawonda.

Q. How often did you go up the river on that boat?

A. Well, I would go up there sometimes twice, sometimes go up three times during the week, and if the water was suitable we towed some out on the lake, down the North Shore and off the South Shore.

Q. When was it that you went up the St. Louis River?

A. That was along, if I remember right, that was in '84 or '85. I ain't positive to the exact time, but it was the same season that the Rambler came up. I think she came up in '82, but I may be mistaken.

Q. Was there more than one Rambler?

A. There was a Rambler that was built after that that was built in Superior, a pleasure boat. I helped to build that boat myself. This was a tug.

Q. This was the Tug Rambler?

A. Yes, sir.

Q. What did you do on the Rambler?

A. Well, I fired, handled the engine on my watch and wheeled her.

Q. Handled the wheel?

A. Yes, sir.

Q. And what boat did you next run on up the St. Louis River?

A. Well, I made three or four trips with the Molly Spencer to what we used to know then as the Fond du Lac boom.

Q. Was that in the vicinity of New Duluth?

A. Just above New Duluth.

Q. And you ran from there down to where?

1329 A. To the Duluth Lumber Company.

Q. That is below Grassy Point?

A. That is down near—that would be——

Q. It's below Grassy Point?

A. Yes, sir, below Grassy Point.

Q. What boat did you next run on, up the river, I mean?

A. I went on the Nellie Cotton.

Q. When was that?

A. I think that was in '83 and '84, or '85 and '6; I ain't positive.

Q. What did you do on the Nellie Cotton?

A. I fired, wheeled, and lined and handled the engine sometimes; I would watch, take the watch all by myself alone, handle the whole thing, but that was principally in the lake when I would do that or else in St. Louis Bay, lower St. Louis, what was known then as lower St. Louis Bay and Superior Bay.

Q. What was the Nellie Cotton doing?

A. Towing logs.

Q. From where?

A. She towed logs from Fond du Lac boom to Kimball and Barber's mill.

Q. On Rice's Point down at Superior here?
A. Yes, sir.
Q. What other boats?
A. If it was a northeaster we generally towed inside. If it was fair weather on the lake we towed from the north and south shore.
Q. What other boats have you run on up the St. Louis River?
A. Well, not to have anything to do with the boat. I have been on the John Hammond and the Odin.
Q. John Hammond and the Odin——
A. Just as a pleasure—just jump on and put in my day and
1330 got nothing for it; short-handed; sometimes I would go on and take a man's place, that is, help out, but I didn't get anything for it. I was promised it but I didn't get it. But I didn't consider that—I done anything that was to be done.
Q. When was that you went up on the Hammond and the Odin?
A. That was about in '89 or '90. If I remember right, it was previous to '90.
Q. What was the Hammond doing?
A. Handling rock.
Q. From Fond du Lac?
A. From Fond du Lac to Lake Avenue.
Q. What was the Odin doing?
A. She was handling rock and some trips she was making, I know where she was making trips on the South Shore for gravel.
Q. When she went up the St. Louis River she was handling rock from Fond du Lac to where?
A. To Lake Avenue.
Q. Lake Avenue in Duluth. What other boats have you been up the St. Louis River on?
A. Well, I have been on the pleasure boat Rambler.
Q. Were you employed on the Rambler?
A. Yes, sir.
Q. In what capacity?
A. As engineer at that time.
Q. When was that?
A. That was in about '98, '95 to '98.
Q. Did you run up the St. Louis River on any other boats in the '80's?
A. Well, I couldn't say. There was one—I couldn't say whether it was in the '80's or '90's; that was on the Merryman when she first came here. I made a few trips with her as linesman.
Q. Did you hold the wheel any?
A. I would hold it on a straight stretch if they had the time; that is, it was just an excursion. They picked me out among the
crowd, more than anything else; I wasn't employed on the
1331 boat.
Q. You wasn't employed on that boat?
A. No, I wasn't employed.
Q. Were you employed on any other boat than those you have mentioned in the '80's?
A. No.

Q. In the early '90's?

A. Outside of the Nellie Cotton and the Rambler.

Q. What did you do on the Nellie Cotton?

A. I fired and stood my watch with the engine; that is, we fired and handled the engine and then if the captain didn't feel very good, principally on the lake, why, I would take part of his watch and wheel, as it is only a straight course. You can't get mixed up any, or no danger.

Q. Do you know of the course that these boats took above Grassy Point?

A. Yes, sir.

Q. What course did they take?

A. Well, as for north and south and east and west I wouldn't pretend to say, but we rounded Grassy Point, that is, we would come through Connor's Point and keep over to the Minnesota side with the Tug Rambler and the Molly Spencer; never went up through the center of the bay because there was too many humps; we would follow the North Shore of the St. Louis Bay until we struck Oneota; then we would haul for Grassy Point; that of course was nearly due north and south. That I do remember from the captain's watching the compass, but the others I couldn't tell you. Then we rounded Grassy Point and there's where they taught me to tell Grassy Point from Reed Point, what we used to know as Reed Point in them times. Grassy Point was always represented to me was the point where the little tamaracks, willows, tag alders and such as
1332 that, muskeg, ran clear through to the main shore. Then this other Reed Island or Reed Point, Reed Bar, we ran between the two up around by Miller's Creek and around by Spirit Lake.

Q. Was the channel known by any particular name, that you took above Grassy Point there?

A. We always called it the long channel. The other was known as the canoe route, the short-cut or cut-off. We never attempted it with these big boats to go through; always went what was known as the main channel, the St. Louis channel; that's what it was called.

Q. St. Louis River channel?

A. St. Louis River channel.

Q. Is that what it was called?

A. That's what it was called among the boatmen.

Q. Have you been up there recently?

A. I was there yesterday.

Q. Did you locate that channel that you ran?

A. Yes, sir.

Q. Where is it with reference to the Carnegie coal dock and the Zenith Furnace Company dock above Grassy Point there?

A. Well, before, I might start in above where I started around Chester there: went around these——

Q. Where is this channel that you speak of with reference to where the present Zenith dock is and the Carnegie dock?

A. The Carnegie dock, it takes in very near the center of the

dock; goes through very near the center of the dock. Blast Furnace dock, it cuts off the corner of the superstructure work; that is where it is built up high with the timbers and stuff, then she turns right there; that's partly in the current, that Blast Furnace dock.

1333 Q. Now, is that the channel——

A. That is the old channel. That is the original St. Louis channel.

Q. That is the channel that you speak of when you say the St. Louis channel?

A. St. Louis channel.

Q. Did some of these boats go the cut-off?

A. None of these except the Minnie Lamont and the Pridgeon. They could get through.

Q. Did they always go the cut-off channel?

A. No.

Q. Sometimes did?

A. If it was dark they never attempted it. They always went the other way because we could sound with the pike pole and tell whether we was in the river or getting into the—instead of heaving a lead we would take a pike pole, 6 feet or whatever it is. As soon as you would strike the bottom you would sheer away and once in a while you would take your pole on the other side. If you was getting leary you take your pole on the other side.

Q. That was at night?

A. That is at night.

Q. Was this channel marked by reeds and bulrushes?

A. Part of it is marked.

Q. Was that the channel that was usually taken by boats that went northerly of Big Island?

A. Yes, sir.

Q. And the light draft boat, you say, sometimes it went the cut-off?

A. Yes; the Minnie Lamont and the Pridgeon. I never come through it coming down while I was on it.

Q. But went up it sometimes?

A. Yes, went up it but never coming down.

Q. They would take the main channel?

A. Take the main St. Louis River.

1334 Cross-examination.

By Mr. Fryberger:

Q. Now, how many feet did the Minnie Lamont draw?

A. Depended on how she was loaded.

Q. What was she, a tug?

A. She was an open boat?

Q. What did she carry?

A. Well, carrying coal.

Q. For her own use?

A. For her own use.

Q. Would that make any difference in her draft?
A. Yes.
Q. Coal for her own use would make a difference?
A. Yes, sir.
Q. What did she draw when she didn't have coal on?
A. When she had just an ordinary supply of coal on put on for just that one day's run she drew about 4 feet and a half.
Q. When she had the coal on what did she draw?
A. You put your coal aft for towing a load and sink your wheel you could draw 5 or 5 feet and a half.
Q. Five feet and a half?
A. Was about her limit.
Q. The Pridgeon was about how much?
A. She drawed about the same. I think the Pridgeon drawed more.
Q. How much more?
A. Probably 6 inches more.
Q. That is, 6 feet would be her limit?
A. Yes, sir.
Q. The Rambler?
A. She drawed about 8 feet.
Q. When did you use that, what year?
A. Well, I wouldn't be positive but I think that was in '83 or '4 or '84 and '5; I wouldn't be sure which?
Q. The Molly Spencer?
A. She drew 9 feet.
Q. You only made three or four trips on her?
A. That is all.
1335 Q. The Nellie Cotton?
A. The Nellie Cotton.
Q. How much did she draw?
A. If she was loaded for outside towing she drawed between 8 and 9 feet. If she was loaded for going up the St. Louis River she drawed about 6 to 6 and a half.
Q. Now then, you are running a steam-boat on the Mississippi now, are you?
A. Yes, sir.
Q. They draw about 2 or 3 feet, I suppose?
A. Two or 3 feet?
Q. Two feet?
A. Yes, more than that.
Q. How much?
A. Five foot 8.
Q. How long have you been steam-boating on the Mississippi?
A. Nine years.
Q. Now step down here a minute, will you please?
A. (Witness takes position in front of table upon which the exhibits are.)
Q. As I understand it, you started in as a fireman?
A. Yes, sir.
Q. And then worked along up to run the engine?

A. Yes, sir.

Q. Did you ever have charge of any of these boats as captain?

A. No' any of these full charge as captain that I have mentioned, but there is many boats I have had full charge of; I haven't mentioned their names.

Q. Now I want to call your attention to Minnesota's Exhibit 1 and to this red line starting in here with A, running to G, from G to B, and from B to C. Here is Grassy Point. Locate yourself from Grassy Point?

A. Well, I can locate myself there a little.

Q. Here, I believe, is that little island (indicating) called, the latest name for it is Grassy Island. I never heard that till
1336 today.

A. That is known, that island there I think you will find it is what we used to call Muskeg Island or Pancake or Snowshoe.

Q. Now then, do you locate yourself, does it look familiar to you?

A. Just let me hold my lead pencil on there.

Q. Did you ever know of boats drawing 8 feet of water or less taking that course when they went up north of the island?

A. No, sir.

Q. Never knew of it?

A. No, sir.

Q. Never heard of it?

A. No, sir.

Q. And you were an engineer and fireman during all that time?

A. Yes, sir. In the '80's we couldn't go through there.

Q. I said from A to G, G to B, and B to C.

A. A boat drawing 8 feet could not go through there. I will swear that.

Q. Did you ever get stuck on it?

A. I have seen boats time and time again try it.

Q. Did you get stuck on it?

A. I never went in there to get stuck. I kept clear of it. I have been in and sounded that whole harbor.

Q. You seem to be very positive about this matter?

A. Well, that's through there, through that way, near that island.

Q. That is, when you say, "that" from A to G, and G to B, and B to C, you say you never saw boats go through there?

A. That there is Pancake Island. I never seen one that went through there unless it was drawing about 4 feet or 5 feet of water.

Q. Now let me call your attention to this Exhibit 54, being a photograph of a part of the map that was made by Captain Meade, United States Engineer in 1861, and I want to call your
1337 attention to Grassy Point marked on this exhibit and want to call your attention to the deep water here to the southerly of Grassy Point and to the water as shown, these soundings running up here on channel marked Z, to the red line commencing marked S and going up to R, and call your attention to the fact that there is from 10 to 11 feet of water all the way up Z and from

9 to 10 feet of water clear up to where you strike what you call the old channel. Now I want to ask you if you ever saw bulrushes or reeds growing on the line that I have called your attention to, I mean right in the line I have called your attention to, in the water from 8 to 10 feet deep?

A. I couldn't say on this jog here around here.

Q. Did you ever see reeds growing on this channel that I have called your attention to all the way up here in from 8 to 10 feet of water?

A. Not any if there is that much water, not in the channel.

Q. Reeds won't grow in 8 feet of water?

A. Reeds will grow in 12 feet of water.

Q. Reeds will grow in 12 feet of water?

A. I will bring it to you. I will go right to Pokegama Lake and pull weeds 18 feet long.

Q. I want to know if there are reeds growing in this channel I have called your attention to?

A. There is little bunches.

Q. Right in water 12 feet deep?

A. Not in water 12 feet deep.

Q. Did you ever go through this channel that I have called your attention to, Z?

A. Not up through there.

Q. You never went through there at all?

A. No, sir.

1338 Q. Of course, you never took any soundings up through from S to R?

A. No. We always went this channel up in here, followed the old channel.

Mr. Gard: He indicates channel marked H.

A. This here is known as what I called Reed Island or Reed Point, all this in here (indicating). Here is your Grassy Point running up in here. And up in here close in to the main shore up in where the Grassy Point narrows through there, used to be a little canoe route about 10 feet wide.

Q. Then between the channel marked H in red on this map and this channel marked Z, S. and R, you say that there was an island running right along to the southerly and westerly of the channel marked H?

A. It ain't a regular island. It don't show up only as the reeds grow up on it.

Q. Does the mud come to the top of the water?

A. No; don't come to the top of the water, but them there is bars, but they are under the water and the reeds grow up on them and here in the St. Louis River the reeds hardly ever show up in water after it gets up to 5 feet deep.

Q. Examine this Exhibit 54. This shows—to the southerly and westerly of channel H you notice the soundings show 4, 5, 4, 5, 3, all the way up; that shows reeds on the map?

A. Yes, sir.

Q. When you get over in this water here to the northerly of Pancake Island it shows 7, 8, 10, 10, and it shows no reeds there at all?

A. It doesn't show on there.

Q. No reeds grew there?

A. Oh, they were scattered——

1339 Q. Reeds did not grow there in 10 feet of water, did they?

A. I wouldn't say in 10 feet of water, the way it's represented according to that; I wouldn't swear to that at all. According to my memory and what I seen in the first times that I was up there in the early days and what I seen yesterday was just the same as you were walking out of here and going in to a light room that looked to be miles and miles away, you couldn't locate yourself.

Q. You couldn't locate yourself at all?

A. Hardly, any more than that I located this channl.

Q. Who was with you yesterday?

A. John Bardon. I took him up. I told him before I gave any evidence I would want to go and sketch that channel.

Q. You talked it over with John, of course?

A. No, sir, didn't talk it over with him.

Q. He didn't know what you were going up there for?

A. Didn't know until we got there.

Q. So when you went up there yesterday the situation didn't look natural to you at all?

A. No, sir.

Q. You haven't been there since the new Government channel was dredged, have you?

A. Well, not since they finished it.

Q. You haven't been there since 1902?

A. Yes, I have been there since 1902.

Q. They finished it in 1902, didn't they?

A. No, sir.

Q. When did they finish it?

A. 1902?

Q. Yes.

A. Just about that time.

Q. What did you say they didn't for?

A. I was thinking of '92.

1340 Q. They finished it in 1902, didn't they?

A. That, I wouldn't swear to.

Q. But you haven't been there since?

A. I was there, the last time until yesterday has been about 13 years ago.

Q. Have you been there since they finished that in 1902?

A. They weren't done with that work the last time that I was up there until yesterday, the last summer that I was up there.

Q. If they finished it in 1902 have you been there since then, prior to yesterday?

A. I wouldn't swear to that part of it. I will tell you the reason why I know. I was working in John Bardon's boat from Fond du Lac and near Fond du Lac just below New Duluth, hauling gravel for Billings Park. We used to go the cut-off then and there was a

dredge at Pancake Island doing some work when we went aground there, and that was the last summer that I was there.

Q. John told you what the issue was, yesterday, I suppose?

A. Sir?

Q. John told you what we were fighting about, yesterday?

A. Said it was just to find where the old channel was.

Q. He told you where he thought the old channel was?

A. No, he didn't.

Q. Did you and John agree on what you thought the old channel was?

A. I sounded and got the old channel.

Q. You sounded and got the old channel?

A. I sounded and got it.

Q. You spoke about upper St. Louis Bay in your direct testimony. Where is upper St. Louis Bay?

A. Upper St. Louis Bay is known from Grassy Point to Spirit Lake; that is upper St. Louis Bay, known in them days as upper St. Louis.

1341 Sept. 18, 1917. 10 a. m.

E. B. BANKS was recalled as a witness on behalf of the State of Wisconsin, and testified as follows:

Direct examination.

By Attorney-General Owen:

Q. Mr. Banks, you are the city engineer for the City of Superior?

A. Yes, sir.

Q. And you have been previously sworn in this matter?

A. Yes.

Q. I now show you Wisconsin's Exhibit 54 and I will ask you to explain what that is?

A. This shows 20 cross-sections of St. Louis River extending from a point a little ways above Grassy Point to a point just east of the Big Island. There are 20 cross-sections and I will describe them by reading the titles to the profile. Profile says: "Cross-section of the St. Louis River above Grassy Point. Line 1 is extending from a point on Wisconsin shore at the northwest corner of lot 1 in section 19, town 49 north, range 14 west, to the shore line of Grassy Point, crossing the main channel of the St. Louis River at a point due west of the most southerly end of Grassy Point. Lines 2 to 20 inclusive are drawn from the same point on Wisconsin shore and extend across the main channel of the St. Louis River at intervals of from 350 to 400 feet, line 20 being drawn across such main channel at the westerly limits of sheet number 1 of Meade's chart; compiled from Meade's chart August 13, 1917, by E. B. Banks."

Q. You made that, did you?

A. I made it.

Q. And you made it from data taken from the Meade chart?

A. Yes, sir.

1342 Q. And that shows the contour of the bottom of the river?

A. It does as near as can be ascertained from this chart of Meade's.

Attorney-General Owen: I offer Wisconsin's Exhibit 54 in evidence.

By Mr. Bailey:

Q. What are these sections? What do they represent up and down?

A. Ten feet vertically and a hundred feet horizontally. Each one of the narrow horizontal lines is a foot—no, it's five feet.

Mr. Fryberger: Five feet both ways?

The Witness: No. This way a hundred, exaggerated a hundred times.

By Mr. Bailey:

Q. That is cross-sections are 350 to 400 feet apart wherever you find the greatest depth shown on the chart, is that right?

A. Yes, sir.

Mr. Fryberger: No objection.

The Commissioner: Map received in evidence.

By Attorney-General Owen:

Q. I show you Wisconsin's Exhibit 53 and I will ask you whether you have computed the distance, the narrowest distance between the red lines shown on Exhibit 53 on the assumption that that is a photograph of Meade's map enlarged 2¼ times?

A. Yes.

Q. And what is the narrowest distance that you find between the red lines indicated on that exhibit?

A. From 45 to 50 feet.

Q. So that that indicates a channel that is not narrower than 45 feet at any place?

A. Yes.

1343 Cross-examination.

By Mr. Bailey:

Q. Of course, you are assuming that the red lines on this Exhibit 53 are drawn identical with the original on the Meade map?

A. Yes, but on a larger scale.

Q. As to whether they are drawn on this exhibit in proportion to the original you don't know?

A. I know nothing about that. I assumed that it is 2¼ times the size, which would make it about 590 feet to the inch.

By Mr Hanitch:

Q. The thickness of the line itself would represent more than 5 feet wouldn't it, Mr. Banks?

A. Yes, I should say it would represent about 5 feet. Some places it is thicker than others, however.

Q. So that in drawing these red lines without apparently changing position you might make that channel ten feet wider or narrower, could you not?

A. Yes, that would be possible.

Redirect examination.

By Attorney-General Owen:

Q. Well, it wouldn't indicate that the channel was any wider, would it? The thickness of the lines would cover up part of the channel, would it not, so that your measurements would make the channel really narrower?

A. Well, in scaling I have taken center to center. The width of the red line covers up four or five feet, probably, on that scale.

Q. You measured from the center of the red line to the center of the red line?

A. Yes, sir; that is the only way I could do.

1344 JOHN A. BARDON was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Mr. Bardon?

A. Superior.

Q. How long have you lived in Superior?

A. Since 1863, born here.

Q. Born in 1863?

A. Yes, sir.

Q. You are at present a member of the Park Commission of the City of Superior?

A. Yes, sir.

Q. How long have you been a member of that commission?

A. Three years, I think.

Q. You are also a member of the Workhouse Commission of the County of Douglas?

A. Yes, sir.

Q. How long have you been a member of that commission?

A. That's about two years.

Q. You are also a member of the local examination board under the Federal Conscription Act?

A. I am.

Q. Aren't you President of the Old Settlers' Association?
A. Yes, sir, this year.
Q What is your business, Mr. Bardon?
A. Real estate, insurance.
Q. How long has that been your business?
A. Well, as far back as before 1880, along there. In fact, I have always been in the business. I followed in that business in the office of my brother, James Bardon, and I have had an office of my own since 1880, about.

1345 Q. How were your boyhood days spent, Mr. Bardon?
A. Why, in farming and boating and lumbering a little or looking after details. My father and brother were in the lumbering and farming business.
Q. Where was your farm?
A. Why, the farm was right here at Old Superior. It was along the bay front and along the Nemadji. We also used to make hay up the St. Louis on the Keesley Meadow.
Q. Where is that located?
A. That is located on the main river above and you might say opposite Little Pokegama, above Pokegama and opposite.
Q. Your brother had a homestead up the St. Louis River?
A. He had a homestead at New St. Louis.
Q. That is opposite New Duluth?
A. Yes.
Q. Did you go up on the homestead frequently?
A. Oh, as a boy I remember trips up there, just a little boy eight years old, about, I think. I remember the trips up there and the mosquitos up along the river.
Q. As a boy did you become familiar with the light-house over on the Minesota Point?
A. Yes. My playmates were sons of Captain Greenfield, and the uncle was really the light-house keeper, but Captain Greenfield kept the light. His family lived there.
Q. Lived there at the light-house?
A. At the old light-house. There was a brick residence attached to the old light in my time.
Q. As a boy did you take to the water very much?
A. Yes; I was born on the bank of the bay and we always had boats and I was fond of hunting and fishing. The water at that time was the only route, if you went anywhere. For instance, if you came up to Middletown, where we had a meadow, that is halfway
1346 up the bay from here, instead of walking you would go up in a boat, and you would go anywhere in a boat.
Q. You mean rowboat now?
A. Yes; rowboat or canoe.

Mr. Bailey: I assume it will take some time with Mr. Bardon. I would like to ask Mr. Banks one more question if you have no objection.

E. B. BANKS, recalled for cross-examination by Mr. Bailey:

Q. Just showing you paper marked Minnesota's Exhibit 55 and calling your attention to the line marked R, X, S, we will just assume that is a line of a channel so-called and that these figures and circles here are the soundings along the line of that channel. Now suppose that the only soundings you had were the ones shown on these figures in that vicinity and that west of the point marked X was a sounding 12 feet and east of the point marked X was a sounding 15 feet. In drawing 12-foot contour lines on a map would you assume that there was at least 12 feet of water between a sounding marked 12 and a sounding marked 15 and draw your contour lines accordingly?

A. I would.

Q. And would do that notwithstanding a sounding just north at the point marked 6 and the sounding just south at the point marked 9 showed that depth.

Attorney-General Owen: Objected to on the ground that it assumes a state of facts that haven't been shown in this case.

1347 A. I would continue the deep water between the point marked 12 and the point marked 15, disregarding the shoal water on each side. I wouldn't have any reason to suppose that the shoal water extended across that point.

(Minnesota's Exhibit 55 offered and received in evidence.)

JOHN A. BARDON was recalled as a witness on behalf of the State of Wisconsin, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Do you hold a pilot's license to pilot boats?

A. I do.

Q. How long have you held such license?

A. I think 1887.

Q. Have you owned boats?

A. I have.

Q. What boats have you owned?

A. I had a half interest in the ferry Mary Martini. She was about 85 feet long. She drew between 6 and 7 feet of water.

Q. What other boats have you owned?

A. I had, after that, an interest in a fishing tug, the Merchant. She drew about 6 feet, I think. Then later on I had little pleasure boats of my own. The first was the Owl. The next was the Anna Roy. I think the next was the Rowena. The next was the Rambler.

Q. Which Rambler was that?

A. Why, it wasn't the Tug Rambler, but it was a boat about 40 feet long. Then the Leo B.

Q. What kind of a boat was that?
A. She was a small boat 35, 6, or 7 feet somewheres. Then the Cecelia B; then the Charles B. Hull; she was a larger boat.
1348 Q. How large?
A. Why, she was I think about 65 feet; and then I had another Rambler.
Q. That was Rambler number two?
A. Rambler number two. And a little boat called the Rosie R. And Nonpareil. And the George W. Ward, and I think the Nellie M. was the last boat.
Q. Did you own the Aerial?
A. Yes, I owned the Aerial.
Q. Did you own the Hull?
A. Yes, I owned her for a season.
Q. The Bia?
A. Yes. The Bia was an earlier one. I had forgotten that.
Q. The Owl?
A. The Owl was the first boat that I had.
Q. Did you own the Playmate?
A. Yes, the Playmate.
Q. Was there a boat called Nokomis?
A. I mentioned that.
Q. Then you have owned a couple of house-boats, haven't you?
A. Yes. And I owned a schooner, the Louis. She was about between 50 and 60 feet long.
Q. How early did you first own a boat or boats?
A. The first actual ownership I think was in '83. That was the Mary Martini, the ferry. She was the larger boat.
Q. The Mary Martini drew about 6 or 7 feet of water?
A. Yes, it would depend upon her load of course; ordinarily between 6 and 7.
Q. Have you always owned a boat of some kind since '83?
A. Yes, sir, all the time.
Q. What part of the waters here did you first become familiar with, Mr. Bardon?
A. Well, the harbors of Duluth and Superior and up the river.
Q. The Superior Bay first?
A. Superior Bay first; Superior Bay and Duluth, perhaps,
1349 yes.
Q. Do you know what was spoken of as the mouth of the St. Louis River in your boyhood days?
A. Yes, that was the entrance.
Q. The entry between Minnesota and Wisconsin Points, you mean?
A. Yes, sir.
Q. Is there anything that impresses that on your memory particularly?
A. Yes. In my visits to the light-house. The reports, I believe, were made out designating it the entrance or the mouth of the St. Louis, and among us boys there was quite a discussion. I always

assumed that the St. Louis was—the entrance to the St. Louis was between Connor's and Rice's Points.

Q. But what was generally considered the mouth of the St. Louis? What point was generally? The point you speak of, was it generally considered——

A. Why, that was what it was known as.

Q. It struck you peculiar because you thought it ought to be up here?

A. I thought it ought to be up here between Rice's and Connor's Points.

Q. That is, what was known as the gate?

A. Yes.

Q. Do you know the route that vessels usually took in coming into Superior Bay from the natural entrance and going up the river or going up the bay?

A. I do, yes.

Q. What course did they take after they came through the natural entry?

A. They followed along Minnesota Point practically until what is now opposite the Daisy Mill, and then on almost a straight line to the end of Connor's Point. There was a division in the channel which is shown on this chart and boats could go around that middle ground, but generally went on the Superior side.

1350 Q. Are you familiar with the Meade map?

A. I am, yes, sir.

Q. Is that the channel that is shown on the Meade map?

A. It is.

Q. That was the channel that was usually navigated by boats in your boyhood days?

A. It was.

Q. When they came to Quebec Pier how did they go?

A. In the early stages the larger draft boats had to follow the main channel up to what we called the opening, that is the narrow part of the point, half a mile or a little more, perhaps, north of the Quebec Pier, and then they would swing around that middle ground and come back straight for Quebec Pier. Water was deeper inside of the middle ground. Afterwards there was a channel dredged straight across from Quebec Pier to the main channel.

Q. Do you remember the natural entry before there was any dredging done there?

A. No, I think there was dredging done in various ways and I know there was, before my time.

By Mr. Fryberger:

Q. Before what time, Mr. Bardon?

A. Well, before I was able to observe any of those things. I know I can remember their dredging there with what they called a twin scoop. That was a scow that had arms that they would drop down and those arms were connected by a sort of a drag, a sort of a harrow, the idea being that dragging that up and down the channel the cur-

rent would take the sand and so on and carry it out into the lake. They operated that and I used to see them many a time.

Q. When was that?

A. That's when I was quite a boy, I suppose 10, 11, or 12.

1351 Q. Do you know how boats ran up through the opening between Rice's and Connor's Point into St. Louis Bay and up to St. Louis Bay?

A. Why, only by hearsay. I sent boats up to what they called the De Costa dock. That was just inside of Rice's Point or perhaps from an eighth to a quarter of a mile, but I was told by pilots that they used to go along Rice's Point to what they called the Zack Brown place.

Q. Where is that?

A. That is now in the vicinity—that is, it would be opposite the P. V. elevator about, somewhere in that vicinity.

Q. How far above the Northern Pacific bridge?

A. Oh, it's half a mile, probably.

Q. And then which way?

A. Then they would square away for what they called the Oneota dock and after they got opposite that they would go almost directly south to Grassy Point.

Q. When did you first become familiar with the waters above Grassy Point in the St. Louis River?

A. Well, I had been up on excursions and small boats from the time I was able to remember, but to have anything to do with a boat was about 1878 or along there. I was employed on the Minnie Lamont, a little boat that was operating at that time.

Q. What was the Minnie Lamont doing?

A. She was really a ferry between Superior and Duluth and only made in the early stages one trip a day and the rest of the time was devoted to scowing wood down the Nemadji River and the St. Louis and shipping it to Superior or Duluth.

Q. How early do you remember being up the St. Louis

1352 River on the Minnie Lamont?

A. That was in 1878 or thereabouts.

Q. About 1878?

A. Yes. It may have been a little earlier.

Q. Did your brother at some time own the saw-mill at Howard's Pocket here at Superior?

A. Yes, he owned the Howard Mill, known as the Howard Mill.

Q. When was that, about?

A. It was about that time.

Q. In the '70's?

A. Yes.

Q. Did you have anything to do with the mill?

A. Why, at times I did; that is, I looked after any little details that any boy could and sometimes assisted in getting logs down or was sent to notify the crew or help bring them down.

Q. From where?

A. Well, various places. Generally, however, on the Wisconsin side.

Q. Up the St. Louis River, you mean?

A. Yes; Big Pokegama, I remember, and Kimball Bay.

Q. Now the first boat you were on up the St. Louis was the Minnie Lamont?

A. Yes.

Q. And that was about '78?

A. Yes.

Q. What other boats were you on in the early day up the St. Louis River?

A. Well, previous to that I was on the various boats that ran up there. Along in '72, '4, somewhere along there the Kesota, the Keeves, the Frost, the Furo, there was a number of boats ran up at that time.

Q. What was the occasion of your being on those boats?

A. That was just for the sake of the ride at that time.

Q. Were there excursions run up to Fond du Lac then?

A. Yes.

Q. Did you go on those excursions occasionally?

1353 A. Whenever I could get the chance.

Q. Were you on the Stillman-Witt?

A. Yes, Stillman-Witt was later, but along in that period. That was owned by Captain Hibbard, J. J. Hibbard. He operated and had a ferry between Superior and Duluth, also ran excursions up the river.

Q. Were you on the Stillman-Witt when Victor Desimval, who testified in this case, was on the boat?

A. Yes.

Q. About when was that?

A. That was along in the '70's, middle '70's.

Q. What other boats were you on up the St. Louis River in the early days?

A. Well, do you mean operating them or just on?

Q. First tell what boats were you on, if you were on any other boats up there that you didn't operate?

A. No; there was nothing any further than I have said, that I can recollect.

Q. What boat did you first operate up the St. Louis River?

A. The first boat that I had anything to do with was the Minnie Lamont.

Q. What did you have to do with the Minnie Lamont?

A. Why, I used to be pilot, you might say. Mr. Brooks was the captain and owner and he also had a store business. I worked part of the time in the store and part of the time on the boat and it got so that I was on the boat a great share of the time.

Q. Did you like boating?

A. I always took every chance I could get, I guess, to get out on the water.

Q. Who first showed you the channel up the St. Louis River above Grassy Point?

A. Why, James Newton went with us the first time that I can think of. He was a pilot and an old steam-boat man. He

1354 ran a boat that Mr. Stuntz was interested in, the Carson, in the early days.

Q. That Stuntz was the surveyor.

A. Yes.

Q. And what boat was Mr. Newton on when he showed you the channel?

A. He was with us on the Minnie Lamont.

Q. Who was Mr. Newton?

A. Mr. Newton was an old-timer had lived in Superior when I first recollect. He was a brother of William H. Newton, one of the proprietors of the townsite, and father of Captain Harry Newton and Charles Newton, both still living.

Q. Were you at that time learning the channel for the purpose of getting a license, pilot's license?

A. Not at that time. That was early. Later on I was.

Q. At what time were you learning the channel for the purpose of getting a pilot's license?

A. At that time I had a permit from the inspectors, to run a boat I guess they didn't issue license to anyone under age, but they would give you a permit if you passed a satisfactory test.

Q. And you had a permit at that time?

A. Yes.

Q. What other pilots or masters did you go up the St. Louis River with at the time you were learning?

A. Later on when we owned the Martini, the Captain of her was R. G. Coburn, who was also an old resident of Superior, vessel owner, man who had considerable means at one time, was a prosperous well-to-do man.

Q. To what extent did he operate boats?

A. Why, after he met with reverses, he had been a boatman, Captain originally, and then after he met with reverses here he went back to the business again.

1355 Q. When was that; about when?

A. Well, he worked for us in '83, for instance, '83, thereabouts.

Q. Did you ever go up the river with Captain Hibbard?

A. Yes; that was earlier.

Q. How early?

A. Oh, when I was a boy he had a son who was learning the business and I used to generally be invited whenever they went up, and the son and I used to sail the boat under Mr. Hibbard's direction.

Q. Did these captains show you what they considered the channel that boats usually ran?

A. They did.

Q. Do you know what course they took after they passed Grassy Point?

A. Yes.

Q. What course did they take?

A. They followed the outline of Grassy Point running practically north towards the mainland, following the old channel, and it is shown on the Meade map.

Q. What was that called?

A. Why, just the main channel or the channel. That was the only deep water channel that I knew anything about.

Q. Was called the main channel, you say?

A. Yes.

Q. Is that the channel that is now obstructed by some docks up there above Grassy Point?

A. Yes.

Q. What docks obstruct it?

A. The Carnegie Coal Dock and the Zenith Furnace Company dock.

Q. Did you sometimes run the cut-off?

A. Yes.

Q. On what occasion?

A. Oh, to shorten distance, and if you had a light draft boat you could go most anywhere, just depended on the size of your
1356 boat.

Q. Now what boat did you operate up the river?

A. This Minnie Lamont and the Mary Martini. In fact, all of these boats, at various times.

Q. The first boat that you steered on without anyone's instructing you or showing you, is that the Minnie Lamont?

A. No. I was shown the channel then and I was shown afterwards; that is the main channel. My own boats I often, of course, ran afterwards; that is, the smaller boats.

Q. Now to what extent have you navigated the river above Grassy Point, Mr. Bardon?

A. Oh, that is pretty hard to say. All the time since. All through my life I have been up and down. Some seasons a great many times and some only a few; I don't think there has been a season, probably, that I haven't been up some way or other.

Q. Did you have a gravel bank up the river?

A. Yes.

Q. How early?

A. I think along in 1900, just about.

Q. Did you bring gravel down?

A. Yes. We scowed it down to Tower Bay Slip, and here at the East End.

Q. Where was your bank?

A. It is opposite New Duluth; that is, this one pit right where the Steel Trust bridge crosses now, where the oil tanks are; and we had another just this side of Fond du Lac, about a mile this side of Fond du Lac, on the Minnesota side, and we got the gravel from various places along a little further up opposite halfway between New Duluth and Fond du Lac.

Q. Bring a great deal of gravel down, did you?

A. Yes. We made about, on a short haul, we would make two trips a day and at least one trip a day for I think it was about
1357 three seasons, and then at various times for two or three seasons afterwards.

Q. Before that what were the boats doing that you were operating up the river?

A. I didn't understand.

Q. What were they engaged in; what were they hauling?

A. The little boats that I had?

Q. Yes.

A. Why, those smaller boats were, you might say, for my own use and amusement.

Q. Did you tow logs?

A. Yes; there was more or less log towing; little odd jobs picking up logs and so forth.

Q. What large boats have you been up the St. Louis River on?

A. Well, these excursion boats that I spoke of, early in the '70's and along, and I remember going up on the Tug Rambler with Mr. Shea. That was in the '80's, I presume.

Q. Is that the Shea who testified here?

A. Yes.

Q. Do you know what course he took up the river above Grassy Point?

A. Why, I know he took the main channel.

Q. That you have described here that is now obstructed by these docks?

A. Yes.

Q. To what extent did you operate boats up the river there in the '80's?

A. Well, in the '80's— In '83 we had the Martini and we ran excursions up there. I think we ran three or four or perhaps more excursions up there the season of '83, and previous to that I was on the Minnie Lamont off and on in '79 and perhaps '80 and along there, and we frequently ran up there for little tows towing cedar, telegraph poles, towing down scows and wood, and in the later '80's, that is, '83 and '84, we operated the Martini occassionally up
1358 there. And '85 and '86 were up a few times, I remember, with this tug the Merchant, for piling and poles and logs.

Q. You spoke of Captain Hibbard. To what extent did he operate boats?

A. Why, he was a boat builder. He was a captain and a boat builder. He owned, as far as I know, aside from sailing craft, the Stillman-Witt and a boat that he built later, called the Free Trade. He spent practically all my early years in the boat business.

Q. He was one of the captains that showed you this main channel?

A. Yes.

Q. Which was the first one, did you say, that showed you the main channel?

A. Well, as boys operating the boat I think he was perhaps the first that spoke of the main channel. That is there was no difficulty in operating his boat at all until you got up there about Grassy Point and then when you got there you had to know the river and had to keep in it.

Q. And to what extent did boats take the cut-off southerly of Big Island?

A. Oh, that depended on the size of the boat and their business.

They could go through there, any light draft boat could go through. The channel was narrow is some place, but ordinarily easy.

Q. In going up northerly of the island, Big Island, was there any reason why boats should take this main channel rather than cutting across anywhere there?

A. Why, the reason that I know of or could think of would be on account of the weeds you would encounter and deadheads
1359 and slabs and stuff that always lodged in where there are weeds and, too, it was easier running in the river in the deep water.

Q. Were those deadheads more apt to lodge outside of the main channel than they were in it?

A. Oh, yes, naturally lodge where they would come next to the shallow water bottom. In the early days the bay, and so on, was full of slabs and driftwood to quite an extent, much more so than now; getting gradually less.

Q. Did you have something to do with the Carson?

A. The Carson, in fact I own her now. She sunk there just east of Quebec Pier at the old town. I own her hull. Mr. Stuntz sold it to my brother James and then I got it from him.

Q. That was an early boat?

A. That was early. She was operated before my time.

Q. She now lies sunken near the Quebec Pier?

A. Yes.

Q. In bringing the tows down the river and the gravel which you spoke of, in the early '90's, what course did you take down the river?

A. With our outfit we generally came through the south of the island. Sometimes we towed two scows; sometimes towed three. Then we would go around the main channel; but with one scow you could slip down through the short-cut. That is especially when we were towing into Billings Park. We furnished the gravel and rock for the Billings park driveway and for riprapping some of those points.

Q. Billings Park is located just above Grassy Point, isn't it, on the Wisconsin side?

A. On the Wisconsin side, yes.

1360 Q. When you had a heavy load, then, you came down the main channel on the northerly side of the island?

A. Yes.

Q. Then you would follow that channel?

A. Follow the old channel around.

Q. To Grassy Point?

A. Yes.

Q. What would be the deciding factor as to whether you took the shortcut or the main channel around northerly of the island?

A. Oh, I think any man trying to make time or doing your work in the shortest time with a light-draft boat would go through the south channel if the draft of your scow or boat would permit you, naturally would.

Q. Mr. Bardon, I will ask you to step down here and look at Wis-

consin's Exhibit 1, and I will ask you if the red line there indicates the main channel that you speak of as the main channel?

A. Yes, sir, it does.

Q. From Grassy Point upward and a little below Grassy Point?

A. Yes, sir.

Q. Is that the channel that vessels usually took in going up the river, except those that took the cut-off?

A. It was.

Q. Mr. Bardon, were you frequently up the river above Grassy Point in the early spring when the ice was breaking up?

A. Yes, sir, in the early days I was.

Q. What was the occasion of your going up there in the early spring?

A. To get the early hunting. Nearly every spring I used to join a party that would walk across to Big Pokegama and operate over there duck hunting and muskrat trapping and hunting.

Q. Did you ever notice whether or not the ice went out of
1361 this main channel that is marked red on Wisconsin's Exhibit 1 before it went out of the rest of the waters up above Grassy Point?

A. Yes. Of course, it was more noticeable above the Big Island. The upper part of the river was generally opened up first and then on down through to Grassy Point and sometimes it would be a week or ten days or so before it would open up clear to the Superior Bay.

Q. Was there danger in crossing this main channel in the spring, because of the ice being cut out by the current?

A. Oh, yes; that was always dangerous and people were eternally falling in or losing a horse or something of that kind.

Q. Was that true down as far as Grassy Point?

A. Anywhere on the river, yes; oh, yes.

Q. The river, you mean the main channel?

A. Oh, yes.

Q. That is marked on Wisconsin's Exhibit I with a red line?

A. Yes, sir.

Cross-examination.

By Mr. Fryberger:

Q. Mr. Bardon, are you the John Bardon here that has been named by a great number of witnesses during the time that Wisconsin has been putting in its case?

A. I think so, yes.

Q. You are a well-known man here in Superior?

A. Yes, ordinarily.

Q. Are you devoting your time to this matter free of any charge?

A. No, sir.

Q. You are getting paid?

A. Yes.

Q. You are in the pay of Wisconsin?

A. Yes, sir.

1362 Q. And have been in the pay of the state during all of the time of the preparation of this case?

A. Yes, sir, practically.

Q. And you are the John Bardon who is taking these different men and parties up to look at this river above Grassy Point?

A. Yes, sir.

Q. Now, you named a considerable fleet of boats here. You said "we owned". Who is "we"?

A. I didn't mean to say "we." On the first boat, Mary Martini, I said "we." I owned a half interest.

Q. Who was the other——

A. L. F. Johnston.

Q. Where is he?

A. He is now in California somewhere.

Q. You named one boat here as being a boat that was the deepest draft boat that you ever had anything——

A. That is the Mary Martini.

Q. That drew about 6 feet?

A. Drew between 6 and 7; just depends on your load.

Q. Now, Mr. Bardon, you have been an office man practically all your business life since you have been a man, haven't you?

A. Why, no, no.

Q. Well, when did you commence in the bank?

A. In the bank in '87, I think.

Q. What was the name of that bank?

A. Bank of Superior.

Q. How old were you in '87?

A. In '87? I was born in '63. Twenty-four years.

Q. Then you went into the bank in what capacity?

A. Nominally, cashier; that is, the cashier that was in, went out.

1363 Q. How long did you remain in that bank?

A. I think 10 years.

Q. Devoted your time in the day-time to the bank?

A. Yes, most of the time.

Q. What time did you say you went into the bank?

A. That would be in '87.

Q. And in '97 you went in some other business?

A. Yes.

Q. Now from 1897 you had never drawn any pay for following boats?

A. No, except in my zeal to be on the water I would try to pick out some employment that had some remuneration; for instance, in this gravel business and in the rock business; and I would try and spend my summers more or less, as much as I could, on the water.

Q. Was that after you went out of the bank and while you were readjusting your affairs and getting into some other business?

A. Yes, sir.

Q. How soon after that time after you went out of the bank before you got into the real estate business proper and insurance?

A. Oh, I had the business all the time.
Q. That you kept running all the time?
A. That I kept running all the time.
Q. You drew no salary for your services in running a boat, whether acting as wheelsman or engineer or anything else, from '97 on?
A. No, I can't say as I did. I simply operated the thing to as much profit as I could.
Q. You didn't spend your time on the boat?
A. Not all of the time. There was three or four seasons that I spent practically all the time.
1364 Q. That was in '97, the summer after '97?
A. Yes; two or three seasons after that. There was a couple of years after I went out of the bank I devoted to copper explorations and looking up all these old stories as to copper finds.
Q. You weren't drawing any salary as wheelsman then?
A. Oh, no.
Q. Where did you look for the copper?
A. I went down Lake Superior to Michipicoten Island.
Q. You have never classed yourself as a captain or lake pilot?
A. No, sir.
Q. You have never trained with or held yourself out as one of these lake captains or captains that have operated tugs in the harbor?
A. No.
Q. You are known as an office and business man, aren't you?
A. Yes, I hope so.
Q. And always have been, isn't that true, from the time you went in to that bank, the time you were 24 years old?
A. I aim to have the insurance and real estate as my business.
Q. And this little fleet of boats that you owned here from time to time drew less than 6 feet of water, the whole bunch?
A. Yes, they did.
Q. You could go most anywhere with those boats?
A. Most anywhere, but a great many places you couldn't go outside of the channel.
Q. To make a long story short, come and look at this. I will hand you Minnesota's Exhibit 54. Now do you recognize that as a plat of a part of upper St. Louis Bay?
A. No, I couldn't say.
Q. From Grassy Point?
A. Oh, yes; now I do.
1365 Q. Now I want to call your attention to this channel that has been marked Z in red ink?
A. Yes, sir.
Q. Showing here from off Grassy Point and off what you call the main channel that has been marked H where you see ten feet, ten feet, see these soundings running up here to the letter S in red?
A. Yes, sir.
Q. You must have known of that deep water, didn't you?
A. Oh, I have been up through there.
Q. Just answer my question, please. You knew of that deep water there?

A. I knew of that deep water followed this island——

Q. I say, do you want us to understand, then, that you didn't know of this deep water running from what you called the main channel up through to the point marked S?

A. Well, I knew of that water up about there, because I used to run there.

Q. Then you ran up as far as S, did you?

A. Not as far as S. We turned there.

Q. Now I want to call your attention to the water which apparently, according to this map, is open water between this island called Pancake Island and over to the reeds, which is to the southerly of the main channel, call your attention to the red line running from S to R and between these black lines, a space that is several hundred feet wide. There is nothing shallower than 7 feet, running from that to 10?

A. That's what this shows.

Q. You haven't any doubt of the accuracy of this map?

A. Oh, no.

Q. Do you know when that Meade chart was made?

1366 A. The Meade chart was made in '61.

Q. Then you haven't any doubt at all of the accuracy of those soundings?

A. I haven't any reason to doubt them.

Q. There isn't any reason on earth why every boat that you have mentioned that you had anything to do with here, and one drawing 6½ feet, couldn't run all the way up through that channel from the main channel off Grassy Point up channel Z and up you might say any part of this channel running from S to R?

A. I presume that is so.

Q. Well, now, do you know, or do you mean to say that you never went up there with those boats?

A. I don't recollect of anything at all. I will tell you why——

Q. Just a minute. Read the question.

(Question read.)

A. I may be did.

Q. Did you ever know of anybody else going up there with this kind of boats?

A. I don't recollect that I did. I have seen other boats picking up logs and frogging all through in on that plat.

Q. Frogging?

A. I mean kicking their way through the mud and weeds and reeds.

Q. Do you mean to say that a boat drawing 6 feet or less would have to kick in mud in water of 8, 9 feet and 10?

A. Not if there was that much water at that time.

Q. Reeds won't grow in 9 feet of water, will they?

A. Yes, they will.

Q. Did they, up here?

A. I won't say as to that. I know of reeds that grew 6, 7, or 8 feet. I have heard of reeds in deeperwater.

1367 Q. I am trying to find out what you know yourself about the matter. Now did you know any of those early navigators that navigated on this bay in the '80's?
A. Yes.
Q. '70's and '80's?
A. Yes.
Q. Did you know of John Howard navigating up there?
A. No, I never did. He never ran a boat. He was interested in the lease of a boat.
Q. Did he ever pilot a boat up there?
A. I don't think it.
Q. If he says he did you think he is mistaken?
A. Well, he may have gone.
Q. What about Ben Howard?
A. Ben Howard was a navigator.
Q. He would know where the channel was?
A. He ought to surely.
Q. What about Alfred Merritt?
A. He ought to.
Q. What about Martin Wheeler?
A. Martin Wheeler ought to know. He navigated the St. Louis.
Q. He didn't run pleasure boats, the same as you did?
A. No, he ran everything.
Q. Well, he ran boats for business?
A. Yes, sir.
Q. Alf Merritt ran for business?
A. Yes.
Q. He wasn't a fellow that ran boats at night and worked in the office in the daytime?
A. He ran at night.
Q. I mean, and stayed in the office in the daytime?
A. I understand.
Q. He was a business navigator?
A. Yes, sir.
Q. Ben Howard was the same?
A. Yes. But I never knew of his navigating the upper bay to any extent. He was vesselman, Ben Howard.
1368 Q. Ben Howard would know where he went, wouldn't he?
A. He ought to.
Q. Now we will take McManus. Do you know McManus?
A. Very well.
Q. He navigated that upper bay long before you did?
A. Yes, sir.
Q. He navigated for business?
A. Yes, sir.
Q. He wasn't a man that stayed in the office in the daytime and ran a boat in the evening?
A. No.
Q. Take Jack Jeffry?
A. Yes.
Q. He was a man that ran boats up there?

A. Yes.
Q. And he didn't stay in the office in the daytime and run in the evening?
A. No, sir, no.
Q. All these men drew salaries, didn't they?
A. Yes, sir.
Q. Brewer, the lumberman, was a man that was very familiar with that?
A. Yes in a way.
Q. What about Captain Stevens?
A Yes.
Q. All these men did, long before you did, and generally after?
A. Stevens did not, but a great many of those other men did.
Q. Stevens was a man that drew a salary?
A. He owned his line of boats himself.
Q. He operated them for business?
A. Yes, so did I, during my time.
Q. What boats did you operate for business and what for pleasure?
A. Well, the Mary Martini was for business, the Minnie Lamont was business.
Q. Well, those you were only on very little each season, weren't you?

A. No. The Minnie Lamont I was on for several seasons
1369 as a boy and the Mary Martinin I was on two seasons.

Q. I want to go into that Minnie Lamont first. Minnie Lamont was the first boat?
A. Yes, sir.
Q. And you were a boy at that time?
A. Yes.
Q. What were you doing on that boat?
A. Why, I was nominally captain. There was two men running it.
Q. How much did she draw?
A. She drew about 4 feet.
Q. There was no earthly reason why you couldn't go up channel Z with the Minnie Lamont?
A. No.
Q. And it would be a good deal shorter than trying to make that curve in around by Milford?
A. Yes.
Q. There you had a boat drawing 4 feet of water, and 6 feet; Minnesota's Exhibit 54 shows nothing less than 8 there where you could go with the boat and yet you never went through channel Z with your little Minnie Lamont?
A. As far as I know we never went beyond the island. We took the channel to the cut-off; as far as I knew that was the cut, and all in beyond there was chunks of reeds and weeds and this floating bog.
Q. Do you mean to tell us that there was floating bog and reeds in that 9 and 10 feet of water in that channel Z?

A. Well, I couldn't say as to that.

Q. Now you said in your direct examination——

A. Except, let me say there was no channel there that was distinct that you could follow. We followed the main channel because it was fenced in.

Q. It was so wide that your boat could run anywhere within a distance of 500 feet?

A. Probably.

1370 Q. In the early days before there was any dredging done in the lower bay down here, nothing but an 8-foot boat could go up there; couldn't go from Rice's Point up to Grassy Point?

A. I suppose that is so.

Q. Nothing but an 8-foot boat; you know that, don't you?

A. Well, I was thinking. You mean before the dredging in the lower bay?

Q. Sure?

A. Oh, yes, yes.

Q. You couldn't get a boat through the lower bay that drew 12 feet of wa'er before there was dredging done?

A. I imagine that's true.

Q. Then there weren't any boats played up at Grassy Point that drew any more than 8 feet of water in the early days?

A. No.

Q. You did make this statement on your direct examination, as I understand it, that the boats with a light draft in the early days usually came down the cut-off. That's true, is it?

A. I think that's true.

Q. A boat drawing 6 feet was considered a boat of light draft wasn't it?

A. Well, ordinarily, yes.

Q. And you agree, then, with these other witnesses that have testified, that in the early days the light draft boats practically all came down the cut-off; you agree on that, do you?

A. Why, yes.

Q. Now, in the early days when they were using 6-foot draft, 6½ and 7, they weren't bringing down three scows there at any time, were they?

A. Yes, in the early days, yes, and the larger boats;

1371 it wouldn't make any difference about the draft. A large boat couldn't make the turn through the Devil's Elbow there with any degree of ease and they generally——

Q. Where do you call the Devil's Elbow, at which end of the cut-off?

A. The Devil's Elbow that I always knew was at the Big Island, the southerly end, you might say, of the Big Island.

Q. Did you never hear of the Devil's Elbow being near Grassy Point?

A. No; except I heard the testimony of Mr. Merritt and one or two others in Duluth.

Q. You weren't familiar enough with the navigators to have ever heard that yourself?

A. I never heard it; that always referred, as far as I knew, to the island.

By Mr. Hanitch:

Q. Do you remember the dredging of the channel in Superior Bay?
A. I do.
Q. And the wasting of the material toward the Wisconsin shore?
A. Yes.
Q. And you are familiar with the character of the sand which they dredged up there?
A. Yes.
Q. That is substantially of the same character as the sand which you get out in the lake off Wisconsin Point, is it not?
A. It's more or less mixed with silt. No, it isn't the same, nowheres near the same.
Q. Isn't it a building sand?
A. No, no; I tried that. With my boat and outfit I tried to furnish that kind of sand for building purposes and got it right
1372 on the sand spit there in several different places where it seemed coarser, and that wouldn't do, and we would go outside and get our load.
Q. It was cleaner sand; that is all. Did you use any of the sand that was wasted there?
A. That was used for filling. We used a good deal of that, but it was used for filling under sidewalks.
Q. Didn't use it for building purposes?
A. Yes, I know of a lumber firm that hauled sand from there in the winter time with that idea, but the pile is still there. I saw it the other day. They couldn't sell it, couldn't use it; sold some, of course. It wasn't building sand.
Q. Wasn't as sharp as the sand in the lake?
A. No, and it is mixed more or less with clay, anyway; there is clay balls in it.
Q. How deep did they dredge that channel?
A. Why, I suppose 22 feet or more, I don't know exactly the depth.
Q. Well, the sand that is wasted or the soil that was dredged and wasted there is apparently all sand, is it not?
A. Along that bay front?
Q. Yes.
A. Oh, no; that's mixed with clay, silt, blue clay and some red clay mixed with silt; vegetation grows on it, you know, nicely.

By Mr. Bailey:

Q. Calling your attention to Minnesota's Exhibit 54, you say that you always used to take this channel Z when you were going through the cut-off?
A. Yes.

Q. Now, up until '85 or 1890 the greater part of the traffic up there went through the cut-off, didn't it?

A. No.

1373 Q. Well, a very large part of it?

A. Well, as I say, the small operations did. In the early days all of these excursion boats went around by the main channel.

Q. But you have known of some boats, at any rate, going on, when they are going north of Big Island, taking the channel S-R?

A. I don't know that I ever saw them going across that way. I have seen boats in there picking up logs. I have seen the Merryman. I have seen the Nellie Cotton.

Q. Assume that such navigators as Alfred Merritt, Ben Howard, John Howard, Captain Stevens, and Captain Jeffry usually took that line S-R when they were going north of the island, there must have been ten or twelve times the traffic up this channel Z, at least up to the island, that there was there in what you call the main channel, wasn't there?

A. No.

Q. That is, including what you call the cut-off; isn't that true?

A. No.

Q. Up this channel Z you got all the traffic that went through the cut-off?

A. Through the cut-off.

Q. And these men that I have named were the principal commercial navigators in those waters?

A. Stevens is the only one I can think of.

Q. I should have included in that Martin Wheeler. I say Martin Wheeler and Stevens and the two Howards and Alfred Merritt and Brewer and these people, if they took that line S-R up to this island there would be 10 or 12 times the traffic in this channel Z that there would be in what you call the main channel, wouldn't there?

1374 A. That I couldn't answer; that, I couldn't answer that.

Q. Let it go at that then.

A. (No response.)

Redirect examination.

By Mr. Gard:

Q. What channel was most of the travel in above Grassy Point?

A. That would be impossible for me to tell; from what I know of the early day traffic, and traffic that I have seen in my operations up there, the greater traffic would be, any large traffic would be the main channel; that is, I have seen lumber barges coming down and these barges going up and down and excursion boats go that way. Any boats that had any draft at all would keep the deep water, on account of ease in running, and to keep out of trouble with the little boats. We always tried to go in the open water because you would get into the weeds with your propeller. Your propeller would foul and you would be in a continual annoyance.

Q. Mr. McManus has been spoken of. Did Mr. McManus tell you whether or not he had navigated this main channel you speak of?

A. Yes, he did.
Q. Tell you that he had navigated it?
A. Yes, sir.

Mr. Bailey: Objected to as hearsay.
Mr. Fryberger: Objected to and ask that the answer be stricken out as hearsay and highly improper.
Mr. Bailey: Object to it on the ground that no foundation has been laid.

1375 Recross-examination.

By Attorney-General Smith:

Q. What in your opinion was the distance from the point where the river divides south of Big Island to the point where you reached the channel south of Grassy Point?
A. I don't know as I get that.
Q. (Question read.)
A. If I understand the question right, it was in the neighborhood of three-quarters of a mile, something like that. You mean if you are going north, starting in at Grassy Point there going the main channel or by the short-cut.
Q. I mean when you were going from where your tracks divide near the south end of Grassy Point, how far would it be from there to the sound end of Big Island where the river divides and part of it goes south of Big Island and part of it west.
A. You mean by the short-cut or around by the island?
Q. The short-cut.
A. The short-cut, oh, I don't know, possibly a mile and a half to two miles; pretty hard to judge at this time.
Q. Now that was a great deal shorter than going around?
A. Yes, sir, it was.
Q. It was approximately one-half the distance, wasn't it?
A. Why, you save about a mile, I think, they used to say, by taking the short-cut.
Q. Wouldn't it be more than that in your best judgment?
A. Well, it would be that, I should judge, anyway.
Q. How much do you say?
A. Save about a mile, probably; perhaps a little more than that.

1376 Q. Then in your judgment it would be somewhere from a mile to a mile and a quarter by the short-cut, and two miles and a half or such a matter by the long?

A. No; I said it would be about two miles by the short-cut and it would be easily three miles, between three and four miles, I guess——
Q. The saving of a mile in navigation is considered quite an advantage, isn't it?
A. Oh, yes, if you can do it.
Q. Now, by this map you have a channel of not less than 11 feet through from on the short-cut south of Grassy Point Island until you get up to the south point of Big Island?
A. If I could see the map I could tell.

Q. Now just down south of here where you divide to change the course (indicating).

(Witness indicates.)

Q. You went away up there on the short-cut?
A. Sure. That's the route, the only route.
Q. Devil's Elbow isn't on that?
A. The Devil's Elbow is over in here (indicating), as I have always known it, and I never heard it — anything else, except I think Mr. Merritt spoke of it as this down here (indicating).
Q. I understood the Devil's Elbow was right at the south point of Big Island?
A. That's true; that's true, up in here (indicating).
Q. This is Big Island here?
A. Oh, no.

Attorney-General Owen: Big Island isn't on that map.
Mr. Powell: That is water down the river from Big Island.

Q. Then the course you pursued in the short-cut was to go through here?
A. Yes, sir. That does shorten it, of course, but——
Q. And you had a clear channel of not less than 8 feet by
1377 the short-cut, according to this map?
A. Yes, except in here. There has been more boats on the bottom there—I doubt if there's that much water there now. It hasn't been for some time.
Q. You don't question but what at this time of the Meade map there was that much water?
A. I don't question the map at all.
Q. And you don't make any claim that rushes grew anywheres along this short route?
A. Oh, yes.
Q. I mean in the channel?
A. Not in the channel but that is quite clearly outlined by the rushes.
Q. The rushes grow up close to the short channel?
A. Yes, all along in here (indicating) and along in here. You could follow the old channel definitely. You could always pick up this line of rushes and islands and bog.
Q. Then this map indicates that any boat with less than eight feet of draft could go up through that channel which constitutes the short-cut?
A. Yes, except there was a short turn there, and the Devil's Elbow was in the way. A large boat, even though she was a short draft, couldn't go through there with any safety. On one of these early excursions we came back that way and we scraped along and ran into the bank on one side, scraped along, scraped a bolt off, I remember; so it wasn't a comfortable way to get down with a large boat even though it was light draft.

By Mr. Fryberger:

Q. Did you ever see the Bayfield map?
A. Why, I saw it in the evidence here.
Q. Never saw it before?
A. Yes, I saw it—I did.
1378 Q. Did you know that the early navigators, until they got the Meade chart, didn't have any other chart to go by except that Bayfield chart?
A. Navigators on the bay here or river didn't use any chart.
Q. Read the question.

(Question read.)

A. No; I don't know; I suppose that's so.
Q. The Bayfield chart shows the only channel to be the cut-off, doesn't it?
A. Why, yes, it does, I think; I am not sure as to that.

By Attorney-General Smith:

Q. The channel that goes east of the island actually, you call the south channel?
A. Yes, sir.
Q. And the one that goes south of the island you call the north channel?
A. No.
Q. Well, just come and look at the map.
A. (Witness goes down to the table and looks at the map.)
Q. You mean by the south channel the one that starts from the southeast part of Big Island in a northerly direction?
A. Yes, sir.
Q. And by north channel, the one that starts from the same point and goes easterly and then around the island past the east of the north side of the island?
A. I do, yes, sir.

By Mr. Hanitch:

Q. Mr. Bardon, you said in your direct evidence, I believe, that you were of the opinion that the mouth of the river was between Rice's Point and Connor's Point?
A. That was the impression I had in the early time.
1379 Q. What gave you that impression?
A. Well, I only knew, in a way, that part of the river as Superior Bay. I was born near the mouth of the river. I was born on Superior Bay there.
Q. But you heard that the mouth of the river was between Connor's Point and Rice's Point, or did the appearance of the waters there make that impression on you?
A. Why, I don't know how I got the idea any more than when people went up the St. Louis River it seemed to me as though they struck the river when they left the bay, when they went through

Connor's Point. I don't know how I got the impression but that was it, and us boys, I guess we noticed that the entry there was on the records as the mouth of the St. Louis, and we got to discussing it, and afterwards I also knew of it through Commodore Saxton. He was the United States light-house keeper and I knew him and our families visited back and forth. It was talked of then.

Redirect examination.

By Mr. Gard:

Q. Mr. Bardon, the Attorney-General asked you to look up navigators who had navigated the St. Louis River, for the State of Wisconsin?

A. He did.

Q. And so far as you know you were looking up navigators for Wisconsin the same as John Howard was for Minnesota?

A. The same.

Recross-examination.

By Mr. Fryberger:

Q. You don't know anything about what John Howard was doing, do you, for the State of Minnesota?

A. Yes.

1380 Q. What do you know about it?

A. Why, I know that he saw the different witnesses that I saw.

Q. You knew that I saw different witnesses, too, didn't you?

A. I knew you were working for the State of Minnesota.

W. J. LEADER was called as a witness on behalf of the State of Wisconsin, and testified as follows:

Direct examination.

By Mr. Gard:

Q. You were on the stand before, Mr. Leader?

A. Yes, sir.

Q. And are county clerk?

A. Yes, sir.

Q. And have been for many years?

A. I have been connected with the office a great many years. I have been county clerk for seven years and I was county clerk in '91 and '92.

Q. Are you familiar with the Roe map of Superior?

A. Yes, sir.

Q. I show you Wisconsin's Exhibit 55 and ask you if that is one of the plates of the Roe map?

A. Yes, sir.

Q. I will ask you whether or not that map has been in general use in the City of Superior since its publication in 1891?

A. Yes, sir.
Q. Is there any other map that has been so generally used as the Roe map?
A. No other.
Q. State about how generally that map has been in use?
A. We have had copies in the county clerk's office, county
1381 treasurer's office and the register of deeds' office and I have seen it in general use in the real estate offices in the city.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 55 and ask the privilege of photographing it and substituting the photograph for the original.
The Commissioner: There being no objection, the exhibit is received in evidence with leave to substitute a photographic copy.

Cross-examination.

By Mr. Bailey:

Q. You don't know, Mr. Leader, who took these soundings or where they were gotten from?
A. No, sir, I don't know anything about that.
Q. You don't know who caused these lines to be drawn through the bay?
A. No, sir.
Q. These dotted lines, you understand, Mr. Leader, to be the established dock line as indicated here?
A. Yes, sir, that's what it claims to be.
Q. I see there is one place, sounding marked between these lines as 8 feet about opposite the Pancake Island we have been talking about. Of course you don't know anything about the soundings?
A. I don't know anything about the soundings or surveys, no, sir.

Redirect examination.

By Mr. Gard:

Q. Mr. Leader, are you familiar with Big Island in the St. Louis River above Grassy Point?
A. Yes, sir, I know where it is and I have been there.
Q. Sometimes called Clough Island?
A. Yes, sir.
1382 Q. And sometimes called Heugier Island?
A. Yes, I have heard it called Heugier Island.
Q. And sometimes called "The Island"?
A. That might be.
Q. Do you know whether that island and the whole of it has always been taxed as a part of the State of Wisconsin?
A. Yes, sir.
Q. Has it always been taxed as a part of the State of Wisconsin?
A. Always since it became private property.
Q. Are there other islands in the St. Louis River above that that have been taxed in the State of Wisconsin?
A. Yes, sir. The Government plat indicates eight islands, prop-

erty up the river, up the river from Big Island, between there and Fond du Lac.

Q. Are those the islands that are shown on Wisconsin's Exhibit 16?

A. Yes, sir.

Q. And have those islands always been taxed as part of the State of Wisconsin, since it became private property?

A. Yes, sir.

Q. Will you give the Government descriptions of these islands?

A. Lot 1 in Section 7, Town 48, Range 15; Lots 1, 2, 3, 4, and 5, in Section 8, Township 48, Range 15; Lots 1, 2, 3, 4, and 5, in Section 1, Township 48, Range 15.

Q. Can you give about the date that that was severed from the public domain?

A. No, sir; I didn't look that up. I did make a search that I knew that from the time it was separated from the public domain it was taxed by Douglas County and the State of Wisconsin.

Q. But you can't state now the dates when that taxation began?

A. No, sir, I haven't got the dates.

1383 Q. Can you give it approximately?

A. No, I can't. Mr. Powell asked me to testify as to this some time ago and I had some dates but I couldn't find them this morning; but I found some as far back as 1863. I am not sure whether that was these islands or part of Big Island. I went through the tax rolls from that time until now, different dates, to satisfy myself that it had always been taxed by this county and state.

1384 Afternoon Session, Sept. 18, 1917. 2 o'clock P. M.

E. F. ENGLAND was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Where do you live, Captain?
A. Duluth is my home.
Q. How long have you lived here?
A. Forty years.
Q. What is your business?
A. Captain.
Q. Of what?
A. The Henry W. at present.
Q. Henry W. is a tug, is it?
A. Yes, sir.
Q. How long have you been running tugs?
A. Off and on since 1888.
Q. Are you the owner of a tug or boat?
A. Yes, sir.
Q. What?
A. The Henry W. and the Badger at present.
Q. How long have you owned those boats?

A. Since March this year.
Q. When did you first run on boats?
A. In about 1885 or '86.
Q. Have you a license to operate boats, master's license?
A. Yes, sir.
Q. What license did you get first, master's or pilot's?
A. Pilot's license.
Q. When did you first get a pilot's license?
A. In 1888.
Q. What had you been doing before that time?
A. Why, I was deck hand, linesman, wheelsman, whatever you call them, on a tug, and firing.

1385 Q. On whose boat?
A. On the Henry F. Brower and the John Martin.

Q. Who ran the John Martin?
A. Captain Jaques.
Q. To what extent have you sailed up the St. Louis River above Grassy Point?
A. Well, since 1888 almost every year up to the present year. I haven't sailed any there this year.
Q. You are at present at Ashland, are you not?
A. Yes, sir.
Q. Come from Ashland here?
A. Yes, sir.
Q. What boats did you sail up the St. Louis River in the '80's?
A. The Amethyst.
Q. What is the Amethyist?
A. She's a tug, a small tug.
Q. And what other boat did you sail in the '80's?
A. The Evaston, J. W. Evaston, and the Lida.
Q. How much water did the Amethyst draw?
A. About 7 feet or 7 feet and a half.
Q. How much water did the Evaston draw?
A. She drawed about the same.
Q. How much did the Lida draw?
A. About 6 feet and a half.
Q. What were you doing with the Amethyst up the river?
A. We were gather- logs, towing logs.
Q. From where?
A. Why, most all over the river there from Big Island down to where they were loading logs on cars.
Q. Did you haul rock any?
A. Yes, sir.
Q. With your boats?
A. The Lida, that is, I was towing scows with the Lida.
Q. From where to where?
A. From Fond du Lac as far as Superior entry, Marshall-Wells building and this Steel Plant here in Superior; brought rock in there, and also the Zenith Furnace.

1386 Q. Did you do anything else with the Amethyst up the St. Louis than tow logs?

A. I don't remember of anything.

Q. And this other boat that you speak of, what did you do with that boat?

A. Why, occasionally towed logs and made a few runs up there with parties.

Q. What do you mean, excursion parties?

A. Why, private parties; that is, the owners would send it out if somebody wanted to go up the river, they would send me out with the party.

Q. Now in the early '90's what boat did you operate up the river?

A. J. L. Williams.

Q. What did you do operating the J. L. Williams—what year did you operate her?

A. About 1900; I think I was two seasons on her.

Q. But in the early '90's, 1890——

A. Yes. The J. L. Williams—I was mistaken in that.

Q. You were mistaken in the date there; instead of 1900 you meant 1890?

A. 1890, yes.

Q. What were you doing with the Williams?

A. Why, occasionally towed vessels.

Q. And what other boat did you sail up the river in the early '90's?

A. The Excelsior.

Q. What kind of a boat is that?

A. Tug.

Q. What did you do?

A. Tugging lumber.

Q. From where?

A. New Duluth and harbor basin here in Duluth.

Q. When was that?

A. I don't remember just the date, the year, along in about 1893 or '94, I should judge, somewhere about there; may be later.

1387 Q. How frequently were you up the river in the '80's on boats?

A. Why, not very often in the '80's; I should judge half a dozen times.

Q. With what boats?

A. That would be the Martin and the Amethyst.

Q. And those other two boats you mentioned?

A. The Lida, that was later on. The Lida I ran there for two seasons.

Q. When you were running the Lida, did you say?

A. About 1890 and 1891.

Q. How frequently were you up there with her?

A. Well, we used to make a trip pretty near every day.

Q. And this other boat that you speak of; how often were you up with that boat?

A. Which boat is that?

Q. That is the boat between the Amethyst and the Lida?

A. The Evaston?

Q. Yes.
A. Two or three times.
Q. What were you doing with that boat?
A. Why, taking a party up the river; that was about all, probably; a little odd job.
Q. Now when were you first up the river on a boat?
A. I think it was about 1885 or '86.
Q. With whom?
A. Captain Jaques.
Q. Did you observe the channel at that time for the purpose of learning it, to run a boat yourself?
A. Oh, I kind of took notice to the way they went.
Q. Have you run up the river in the '90's a great deal; that is, from 1890 to 1900?
A. Yes, quite often.
1388 Q. With what boats?
A. Well, it would be the Excelsior, also the Zenith.
Q. What were you doing?
A. Vessel towing.
Q. How often were you up a season?
A. Oh, probably once a month; may be oftener; I can't just remember; whenever there was a tow up there I used to have to take the tow.
Q. Since 1909 have you been up frequently?
A. Off and on I have, yes, sir.
Q. Always went up when anything called you up there?
A. I hauled cedar for Marshall H. Coolidge for three seasons.
Q. When was that?
A. I can't just remember the dates.
Q. About when was it, if you can tell just about; was it in the '80's?
A. I think it was about 1905 or '6.
Q. What course did you take, Captain, going up and coming down the river above Grassy Point in your navigation?
A. Well, we used to head over towards the Zenith Furnace and across where the Carnegie coal sheds is now, is the old river bed, what we used to call the old river bed.
Q. You ran in the old river bed?
A. Yes, sir.
Q. Is that old river bed now blocked by docks up there in that vicinity?
A. I think the Carnegie dock extends over the old river bed or partly over it.
Q. And the Zenith dock also?
A. I wouldn't say about the Zenith dock. I think there is part of the slag dock or pile dock that runs out pretty close to where we used to make the turn in there.
Q. Was that known as the main channel of the river?
1389 A. Yes, sir.
Q. Was there pretty deep water in it?

A. In places it was. There was a few spots that was shallow that I think they dredged out at three or four places.

Q. I will ask you whether or not what you call the main channel that you ran was known as the generally navigated channel up the St. Louis River?

A. Yes, sir.

Q. Did boats sometimes make a cut-off there south of Big Island?

A. Light draft boats did.

Q. But which was the main navigated channel?

A. What I would call the river bed, the channel I have just——

Q. Spoken of and——

A. Yes.

Q. ——the one that the dock extends out over now?

A. Yes, the one the dock extends over.

Q. Have you been up the river above Grassy Point in the early spring?

A. Yes, sir.

Q. Before the new channel was dredged?

A. Yes, sir.

Q. Where did you find the ice melted out first?

A. Always in the channel, river channel.

Q. That is this main channel that you have spoken of?

A. Yes, sir.

Q. Was that through down through across past Grassy Point?

A. All through wherever the current would work the ice out.

Q. Would it work it out in the old channel down past Grassy Point?

A. Yes, sir.

Q. Have you seen the channel open when there would be
1390 skating on the rest of the water up there?

A. In spots I would.

Q. When was that?

A. Well, I can't just remember the year. There was only, I think, one occasion that I come down with the Zenith in November, with the schooner Molly C. Burt, I think was the initials of her, and the people skated out to us.

Q. About when was that?

A. I should judge that would be somewheres in 1903 or '4, I wouldn't state.

Q. 1903 or '4?

A. I think so; somewheres about there. I wouldn't just say the date.

Q. Were you up there in your early experience in the spring of the year?

A. But the ice would be gone, yes. That was in the fall I am talking about now. That was in the fall.

Q. In the spring of the year were you up there in your early experience on the river?

A. Yes.

Q. Did you notice the ice go out of the river channel?

A. Well, the ice would be floating around in spots there by the

time we got fitted up to go up there—there would be very little ice.

Q. Did you go up there to stake the river out in the spring of the year sometimes?

A. Yes, sir.

Q. When?

A. Any time, all these times I mentioned. We would have a tow and go up there, and there was no Government stakes then after leaving Grassy Point and the bulrushes wasn't up. We used to put stakes at these shoal points we were liable to foul up with, and take the tow.

Q. Was that in the '80's?

A. No; that was later on.

Q. How much later, in the '90's?

A. Well, I should judge in 1900—or 1898 and '99.

1391 Q. I noticed you said 1900 once before. Are you inclined to get 1900 and 1890 mixed a little?

A. I guess I have.

Q. Now get this straightened out, if you can. When was it you ran the Zenith?

A. I think it was in 1904 or '5.

Q. That wasn't in 1894?

A. No, it wasn't; that was in 1904 or '5.

Q. Did you take the cut-off in some of your work?

A. No, sir.

Q. Didn't take the cut-off in any of your work?

A. No, sir.

Q. Went around the main channel?

A. Main channel.

Q. And when were you doing that towing rock?

A. Well, that was in the early part of my sailing, about 18—I should judge about 1901.

Q. About 1901? Do you mean 1891? You began in the '80's.

A. I am mixed up in my years.

Q. Yes. Now then, get that straight, Captain, will you. You began running the boat in 1888, didn't you?

A. That is, I got my license out; about three years I done that towing with the Lida.

Q. Then that was about 1890 or '91?

A. 1890 or '91. I make a mistake in '91 and 1901.

Q. It was 1890 and '91, then, that you did this towing rock?

A. Yes, sir.

Q. And how frequently were you up there those years?

A. Well, we took an empty scow up one day and loaded scows down the next.

Q. Doing that all summer?

A. Very near all summer, yes, sir.

Q. You went the main channel?

A. She was a light draft boat. Not always. Could go

1392 through the cut-off with her.

Q. Sometimes go through the cut-off with her?

A. Yes.

Cross-examination.

By Mr. Fryberger:

Q. Now that Marshall H. Coolidge cedar business consisted in your hauling cedar on scows from away down the lake here up to Coolidge's yard at New Duluth, didn't it?

A. Yes, sir.

Q. You didn't tow anything; you hauled it on scows?

A. Hauled it on scows. .

Q. And carried down cedar there along about 1905 and he only ran the yard two or three years, isn't that so?

A. I hauled cedar for him three years.

Q. You hauled all the time he was there, didn't you?

A. No, sir, there was other parties hauled there before I started for him.

Q. You hauled there till he quit?

A. I pulled the last cedar he had taken into the yard, yes, sir.

Q. Then you and Frank Chandler got hold of a tug and scow?

A. We had an outfit then.

Q. You and Chandler had the outfit then?

A. Yes, sir.

Q. Have you got that yet?

A. No, sir.

Q. That was in 1906 and '7 wasn't it, that you hauled that cedar for Coolidge?

A. I should judge about that.

Q. You spoke of being up the river about half a dozen times in the '80's?

A. Yes, sir.

Q. Prior to 1890, then, you had very little experience on the upper St. Louis Bay, half a dozen times during the whole time.

1393 A. Before that?

Q. Yes, before 1890.

A. Before 1890.

Q. Yes, you said during the '80's you was up there probably half a dozen times altogether; that is, during the '80's. You said you started in '88.

A. '85 and '86. I said I was up there with Eli Jaques.

Q. Did you start to run a boat in 1885?

A. No, sir.

Q. You said you were up there about half dozen times in the '80's. Do you want to change that?

A. In 1888 I was up there, I said, with the Amethyst, towed logs there for——

Q. Please pay attention to my question. Read the question (Question read). Do you want to change that?

A. I don't think I do.

Q. Then you commenced to tow down some of the barges of lumber alone in the '90s didn't you?

A. Yes, sir.
Q. How deep draft were those barges that you began to haul down with lumber in the '90's?
A. About 14 feet 6.
Q. That is when your principal work commenced up the river, wasn't it?
A. Yes, I would say in that line with the heavy draft boats.
Q. You didn't have more work after that time than you did before?
A. No, sir, I don't think I did.
Q. Don't think you did, hauling down these barges?
A. No, sir.
Q. You didn't haul down any 14 foot 6 barges of lumber until after the dredging was done and they deepened that channel, did you?
A. Yes, sir, I hauled them down before there was a dredged channel there.
1394 Q. Before the Government made the straight channel but not before the dredging was done to deepen the channel?
A. I mean the few odd spots, points, yes.
Q. You couldn't bring down these heavy barges, deep draft barges until after the Government had deepened out the channel in 1893, isn't that true?
A. Well, now, I don't know whether we could or not.
Q. Mr. England, no man ever brought down a 14 foot boat on upper St. Louis Bay from New Duluth to Grassy Point until the Government had done some dredging there, did they?
A. Yes, sir, I guess that's right.
Q. You don't know when that dredging was done?
A. No, sir.
Q. You spoke about being on the Williams in 1890?
A. Yes, sir.
Q. How deep draft was that boat?
A. I should judge about 10 feet or 10 foot 6, depends on your coal.
Q. You didn't go up that channel with a 10 foot boat in 1890, did you, prior to the dredging in the channel in '93; aren't you mistaken in your dates?
A. On what channel?
Q. In any channel above Grassy Point?
A. Sure.
Q. You think you went up with a 10 foot 6 boat prior to the time the Government dredged the channel?
A. Yes, sir.
Q. Prior to the time there was any dredging done?
A. Yes, sir.
Q. You aren't very certain of your dates?
A. It is pretty hard to jog my memory to get my memory right back to the time.
Q. You can't tell when the dredging was done?

A. No, I couldn't tell the date.

1395 Q. You don't know where the boats ran in an early day there, do you, prior to '85, where the early navigators ran, of your own knowledge?

A. There was spots there where you probably could get a short tug through that would draw almost as much water as the barges, but you couldn't get a long boat through, because the channel wasn't straight.

Q. There were places where you could get a 14 foot boat through outside of this channel if it was only a shorter boat?

A. I came down with the Mary C. Burt. I pulled her over one of these places.

Q. What year was that?

A. That's pretty hard to tell the year. It was the year I was in the Zenith.

Q. When was that?

A. I would probably have to look up some records; changed around with so many different boats it would be pretty hard to tell the year; I went out of one and into the other.

Q. It's pretty hard to fix these dates?

A. Yes, sir.

Q. And you are doing the best you can?

A. Yes, sir.

Q. Captain, I want to show you Minnesota's Exhibit 54 and ask you to locate yourself on this chart. Here is Grassy Point (indicating) and here is a channel that you call the river channel, the old river channel marked H. Can you see that?

A. Yes, sir.

Q. Now then, here is an island with little stars on and it has more names than any island I ever heard of. Pancake Island and Snowshoe Island, Shoepack Island, Grassy Island, several other names. Do you locate that?

A. Yes, sir.

Q. Now, I want to ask you to look at this channel marked Z, running here with the soundings 10, 11, 10, 10, and so on, all the way up between these black lines, to the point marked S in red.

1396 A. Yes, sir.

Q. Did you ever go through there?

A. Yes, sir.

Q. And you have also gone through there, have you not, from S on up to the point marked R, where you see the soundings here, 9, 10, 8, 9, 10, 9, and 8?

A. Not with the big draft boat I never have.

Q. I didn't ask you about a big draft boat. Did you ever go through there with a boat?

A. I have once or twice that I remember.

Q. You could go through there with a boat drawing 8 feet couldn't you?

A. I could fetch up and feel my way along, back off.

Q. Did you ever know of boats using that channel, that is this one marked Z and S and R?

A. Not frequently.

Q. But you knew boats did use it?

A. I can't say.

Q. How deep draft boats went through the cut-off?

A. I should judge not over 7½ feet.

Q. Well, in the early days don't you know, as a matter of fact, that the cut-off was practically the only channel that was used; don't you know that?

A. No, sir.

Q. Didn't you ever hear that?

A. No, sir.

Q. Do you know how deep draft boats could navigate lower St. Louis Bay before there was any dredging done?

A. Well, I have known of boats, yes.

Q. Before any dredging was done how deep a boat could go up it?

A. Probably ten or twelve feet.

Q. Don't you know there couldn't be over an 8 foot boat navigating this lower bay before any dredging was done?

A. I don't know.

1397 Q. Why did you say 10 or 12 foot boat——

A. Why, I have known of boats going in, such as the Nellie Cotton, that I should judge drew somewhere about 8 or 10 feet, and they run before I ever knew of any dredging up there for sure.

Q. Then you don't know of any dredging in lower St. Louis Bay?

A. I was figuring on Superior Bay.

Q. I am asking you about lower St. Louis Bay?

A. What do you call lower St. Louis Bay?

Q. I will ask you what do you call lower St. Louis Bay?

A. That is pretty hard to say. I would call lower St. Louis Bay between the Northern Pacific bridge and the St. Paul bridge, railroad here, docks come in.

Q. That is the Northern Pacific bridge to the old St. Paul and Duluth bridge that runs in from West Superior over to Grassy Point?

A. Yes, sir.

Q. What would you call the expanse of water from the Northern Pacific bridge out to Grassy Point—to Rice's Point?

A. I would also call that——

Q. Where is the upper St. Louis Bay?

A. Upper St. Louis Bay?

Q. How far did that extend?

A. I don't know, unless that would be that bridge cut the bay in two where that mark is, one part upper, the other lower.

Q. Didn't you ever see a map showing upper St. Louis Bay above Grassy Point and below Big Island?

A. No, sir.

Q. Didn't you ever hear it called upper St. Louis Bay?

A. I have heard the upper part of the bay or lower part
1398 of the bay. I don't know whether there was any upper——

Q. Didn't pay much attention to it?

A. No, that is as they divided the bay in two.

Q. Do you know when the lower St. Louis Bay was dredged from Connor's Point to Grassy Point so that these boats drawing more than 8 feet of water could get through? I am asking you what you know about it?

A. Yes, I remember when the dredging was done.

Q. When was it?

A. I couldn't tell you the year. It was the year I started towing lumber barges up to New Duluth, I know that.

Q. When did you come to Duluth?

A. I have been in Duluth forty years.

Q. How long were you familiar with that lower St. Louis Bay?

A. Oh, I should judge since 1885 or '86.

Q. What is your age?

A. Fifty years old.

Q. You don't know much about the condition of the bay 46 years ago?

A. No, I don't think I did.

Q. Well, do you know when lower St. Louis Bay was dredged?

A. I know when they dredged in there but I couldn't tell the date they dredged.

Q. Before any dredging was done do you know that they could only get through lower St. Louis Bay with a boat drawing 8 or 9 feet at the most?

A. No, sir, I don't know.

Q. Then at that time before there was any dredging done in lower St. Louis Bay you don't know where the boats traveled going upper St. Louis Bay after they go by Grassy Point, do you?

A. I am only referring to my knowledge of the time that
1399 I sailed; that was in that time.

Q. But you only had about half a dozen trips on that bay during the '80's, as you said?

A. I had my mind in the Amethyst in '88. I don't remember the time I stated there, but I referred to five or six times before I had my license, and the time I was on the Amethyst.

Q. Then your experience on upper St. Louis Bay was largely after 1890, wasn't it?

A. Oh, I don't know. It was from the time I started in there, different kinds of experience; deep draft boats was later on in the '90's.

Q. Deep draft boats was after 1893, wasn't it?

A. I just forget just what time Clark Packson started their mill, and shipped lumber out there. I couldn't give the date. I think I towed the first boat up there and towed her back.

Redirect examination.

By Mr. Gard:

Q. Now, Mr. England, I want you to get yourself straightened out as to how much work you did up the St. Louis River in the '80's; that is, any time before 1890; you began in 1886, was it, or '7?

A. No, I didn't have a license.

Mr. Fryberger: I am going to object to that on the ground that he has already stated on his direct examination and his cross-examination that he wasn't up there more than half a dozen times during the '80's.

Mr. Gard: It appears, I think, that he meant before he started running boats.

1400 The Commissioner: Go ahead and answer the question subject to the objection.

Q. Mr. England, when did you begin running the Amethyst up there?

A. In 1888.

Q. What were you doing?

A. I was sailing her then.

Q. How often did you go up there with the Amethyst in 1888?

A. Why, I couldn't tell. We were called up there, sometimes it would be may be once or twice a week during the fall of '88, I wouldn't say how often, until it froze up, until the boat burned.

Q. When did the boat burn?

A. I think it was along in the fore part of November.

Q. The next year, 1889, what were you doing?

A. I was sailing the Evason.

Q. How often did you go up the St. Louis River that year?

A. I think they sent me up two or three times or more; I couldn't say how many times we passed up the river. That is the boat I went up with the parties.

Q. Went up there any oftener than you just took these parties up?

A. I think that is all with that boat.

Q. That was about 1889, you think?

A. 1889.

Q. What did you do in 1890?

A. I towed stone in 1890 with the Lida.

Q. That is the year you were up there quite frequently every day?

A. Yes, sir.

Q. Towing stone all that year?

A. Very near all that year.

Q. How often were you up there then?

1401 A. I should judge there was times when they kept us right at the stone business when we towed light scows up one day and loaded down the next.

Q. How long did that last?

A. I think we put in pretty near the whole season; I don't just remember.

Q. That was in 1890?
A. Yes, sir, I think it was in 1890; was towing for Mr. Crowley there. I might be mistaken a little in the year.
Q. The first boat you say you operated up there was the Amethyst?
A. Yes, sir.
Q. That was in '88?
A. '88.
Q. And you operated that until she burned?
A. Yes, sir.
Q. And what were you doing with that?
A. We were towing logs for the Cloquet Lumber Company. The boom was broke and the logs were around and we were gathering them up.

Recross-examination.

By Mr. Fryberger:

Q. When you towed the stone that's when you went up the cut-off, wasn't it?
A. Yes, sir, we used the cut-off.
Q. That was in 1890?
A. Yes, sir.

1402 WILLIAM L. HUTCHINS was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct Examination.

By Mr. Gard:

Q. Where do you live?
A. Bay City, Michigan.
Q. What are you doing at the present time?
A. I am in the ferry line, sailing the Swansea.
Q. How long have you been sailing the Swansea?
A. About eight years.
Q. That is the ferry between Superior and Duluth?
A. Yes, sir.
Q. Captain Majo's line?
A. Yes, sir.
Q. What is your regular business?
A. Sailing.
Q. How long have you been a sailor?
A. About fifty years.
Q. How long have you held a pilot's license?
A. Ever since 1886.
Q. Master's license too?
A. Master's license.
Q. Have you ever sailed up the St. Louis River?

A. I have been up there a couple of times, yes, sir.
Q. Any more than a couple of times?
A. Do you mean clean up to Fond du Lac?
Q. Well, up the St. Louis River to the vicinity of Spirit Lake or Big Island?
A. Yes.
Q. How often?
A. Well, I used to be up there every day.
Q. When?
A. That was in 1902 and '3, I think, when we was working in that new cut.

1403 Q. That is when they were dredging?
A. Yes, sir.

Q. You had sailed boats up there before that, hadn't you?
A. Yes, sir.
Q. What boat did you sail?
A. Plowboy.
Q. When was that?
A. I think that was in '87.
Q. What is the Plowboy?
A. She was a little passenger boat.
Q. That was in the excursion business?
A. She was on the ferry line here and Hanson took excursions up there a couple of times.
Q. And what other boats did you sail up the St. Louis?
A. Edward Gillen, tug.
Q. How often did you go up there with the Edward Gillen?
A. I think we used to make about five trips a day to the lake; I was towing lumps, the lump scows to the lake, I was tending the dredge up there.
Q. Where was that?
A. From Grassy Point up, up there on that new cut.
Q. When was it?
A. I think it was 1902 or '3.
Q. When they were dredging the new channel?
A. Yes, sir.
Q. And you were hauling dump scows out into the lake?
A. Yes, sir.
Q. Did you dump scows in the old channel?
A. Sometimes, yes, sir.
Q. When you took the Plowboy up, what channel did you take?
A. From Grassy Point up the St. Louis River, in the main channel.
Q. In the main channel?
A. Yes, sir.
Q. Is that the channel that is now covered or partly covered by the docks?
A. Yes, sir.

1404 Q. Did you go up the St. Louis River with any other boats than the Plowboy, in the '80's?
A. No.

Q. In the '90's?
A. No.
Q. Just the Plowboy?
A. Just the Plowboy.
Q. Did anybody show you the channel?
A. I had a pilot.
Q. You had a pilot?
A. Yes, sir.
Q. Who is he?
A. R. G. Coburn of the East End.
Q. He went up the main channel of the St. Louis?
A. Yes, sir.
Q. R. G. Coburn?
A. Yes, sir. I think that's his initials.
Q. That is the Coburn that owned boats in the early day?
A. I think so, yes.

Cross-examination.

By Mr. Fryberger:

Q. Mr. Hutchins, you live in Bay City?
A. Yes, sir.
Q. How long have you lived there?
A. About 35 years.
Q. Well, how long have you been around the head of the lakes, then?
A. Head of the lakes here?
Q. Yes.
A. I came here first in 1883 with the ferry boat. I brought a boat up here from the ferry line running from Old Superior to Duluth. Bardon and Johnston, I think, was the owners.
Q. Ferry boat?
A. Yes, sir.
Q. How long did you stay?
A. I stayed the season out. Came up here in August.
Q. What was the name of the boat?
A. Mary Martini.
Q. You stayed the season out and ran back and forth between Superior and Duluth?
A. Between Old Superior and Duluth. There wasn't
1405 any——
Q. That was in 1883?
A. Yes, sir.
Q. Then did you go back to Bay City?
A. Yes, sir.
Q. How long did you stay?
A. I don't know whether I came back the next season or not; I don't think I did.
Q. Did you come back the next year after that?
A. No. I think I came back in '87.

Q. Aren't sure about that?
A. I think so.
Q. You think in '87?
A. Yes. That would be the Plowboy.
Q. Then you ran the Plowboy?
A. Yes.
Q. How long did you run the Plowboy?
A. Finished out that season. I think we got up here in July or August, I am not positive about it.
Q. And you ran the Plowboy that season?
A. Yes, sir.
Q. And then you went back to Bay City?
A. Yes, sir.
Q. How long did you stay in Bay City?
A. Why, I think 1897.
Q. Until 1897?
A. I think so.
Q. Then you ran the Plowboy a part of one season?
A. Yes.
Q. Where did that run?
A. Ran between Superior and Duluth.
Q. And occasionally you would go up the St. Louis Bay?
A. Yes, sir, made two trips up there, up Fond du Lac.
Q. On the Plowboy?
A. Yes, sir.
Q. That is all the trips you made on the Plowboy up there?
A. Yes.
Q. Now that was a little boat that drew how much water?
A. Nine feet.
1406 Q. And that was in the year '87, was it?
A. I think it was. I am pretty sure of it.
Q. You took a pilot with you that time?
A. Yes, sir, both times.
Q. Because you weren't familiar with the river?
A. Yes, sir.
Q. How did you happen to come up here, I mean, this time, to this trial?
A. What?
Q. How did you happen to come up here to this trial?
A. I got word to come up here; wanted me to appear here.
Q. John Bardon?
A. Yes, sir.
Q. John Bardon. Talked to John Bardon about this case after you got here?
A. Not a great deal, no, sir.
Q. You did some. You came back, you say, in 1897?
A. I think it was 1897, in the spring.
Q. You left in 1887; that is the year you ran the Plowboy, and you left and went to Bay City and didn't come back till 1897?
A. I think it was '97.

Q. And when you came back in 1897 there had been some dredging done in the channel above Grassy Point, hadn't there?
A. No, not that I know of.
Q. You don't know anything about it?
A. All I know about dredging would be from Grassy Point up through there.
Q. When you came back in '97, what did you do then?
A. I went in the Tug Gillen.
Q. Where were you running the Tug Gillen?
A. Starting in up in East End there, old Superior, and
1407 when I stopped I stopped up at Spirit Island.
Q. How many years did you keep running that?
A. I think about five.
Q. About five years?
A. Yes, sir.
Q. Then all you did after that was to tend dredge with that Tug Gillen?
A. Yes, sir.
Q. Just followed that dredge as it went up the lower bay and the upper bay?
A. Yes, sir.
Q. Kept it up about five years?
A. Yes, sir.

Redirect examination.

By Mr. Gard:

Q. Did you do any other towing up the St. Louis above Grassy Point or any navigating in the '80's or '90's?
A. No, sir.
Q. Weren't up there on any boat?
A. In 1897—'87, I was up the river, I told you, a couple of times.
Q. No other times?
A. No, sir.

1408 B. J. VAN VLECK was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. I show you Wisconsin's Exhibit 55, being chart 1 of the Roe map, and ask you if you are familiar with that map?
A. Yes, sir.
Q. It is a part of an atlas, isn't it?
A. Yes, sir.
Q. Roe's atlas?
A. Yes, sir.
Q. How long have you been in Superior?

A. Since February, 1890.
Q. What is your business?
A. Real estate.
Q. Have you been in the real estate business ever since 1890?
A. Practically, off and on. There was a time when there wasn't any.
Q. How generally has the Roe's atlas, including Wisconsin's Exhibit 55, been in use in Superior since it was published in 1891?
A. Its use has been universal. It was the only atlas we had. All the real estate men used it; recently they have gotten out, in the last couple of years, they got out another one.
Q. That is the Kelley map you refer to?
A. Yes. McLean and Kelley.
Q. But has the Roe map been used as much as all the other maps put together?
A. Yes, sir, amongst the real estate men; they have all had it.
Q. In the county offices isn't it too?
A. Yes, sir. I have seen it in the county clerk's office there.
1409 Q. Do you know of any other map that has been used by anybody as much as the Roe map?
A. No, sir.

Cross-examination.

By Mr. Bailey:

Q. This Roe's atlas was published by Frank B. Roe?
A. Frederic.
Q. Frederic B. Roe, wasn't it?
A. Why, yes, I suppose so. I remember the fellow that was here. His name was Roe. I don't know whether it was Frederic or not.
Q. And he published atlases of the vicinity around the head of the lakes, did he not?
A. Yes. I think he published one in Duluth at the same time.
Q. And this Minnesota's Exhibit 11, I wish you would just look at, published by the same man, Frederic B. Roe, and in the same year or a year earlier, 1890?
A. Yes.
Q. This one which shows the state line midway between the banks of Wisconsin and Minnesota?
A. I presume so.
Q. Published one year earlier, in 1890?
A. (No response.)
Q. And this one that you are now looking at is commonly referred to as the sectional map for this vicinity' isn't it?
A. That, I don't know. I am not familiar with the Duluth side of that. I know he got out a map and I presume that's part of it.
Q. I suppose you don't know whether these lines on there up through the bays were, so far as the soundings were concerned, taken substantially from the old Meade's chart or not, do you?

A. You mean on this atlas here?
Q. Yes.
A. I don't know, no, sir.
1410 Q. You don't know where they were taken from?
A. No.
Q. In this Roe's atlas that you have referred to, which you say you used here in Superior, there is no sectional or township plat, is there, not in this map that has been produced here, at any rate?
A. Why, I don't know just exactly what you mean.
Q. I mean a township plat something like this Minnesota's Exhibit 11, showing townships at the head of the lakes, Government townships?
A. Nothing except this here in the back part of the book (indicating).

Mr. Gard: That shows it.

A. That is as near a township map as you can get.
Q. But that you refer to doesn't show anything about the state line one way or the other, does it?
A. No, sir.

1411 WILLIAM TIEDEMAN recalled as a witness on behalf of the State of Wisconsin, and testified as follows:

Direct examination.

By Mr. Gard:

Q. You are the assessor in Superior?
A. Yes, sir.
Q. How long have you been assessor?
A. Since 1905.
Q. You testified in this case, didn't you?
A. Yes, sir.
Q. You testified about assessing separately the Carnegie dock and the Zenith Furnace Company property above Grassy Point, didn't you?
A. I don't know as I testified to it, but the fact is we do.
Q. When did you begin assessing that separately?
A. 1913, spring of 1913.
Q. For what tax year?
A. For the tax of 1913.
Q. When did you first learn of improvements made on that property?
A. To the best of my recollection it was during the winter, during the late autumn of 1912, and the winter up to January 1st, 1913.
Q. Did you assess it then the next year after you knew of improvements being made on there?
A. Made our assessment there, I was over there April the 30th, 1913. I remember that distinctly, because I was over there just on the 1st of May or right the day before.

Q. How had you been assessing property up there on the Wisconsin side prior to that time?

A. By Government lot description.

Q. When you assessed this property separately in 1913,
1412 did you deduct anything off of the Government lots for what you assessed separately?

A. Made a note on there, all excepting that portion lying north of the U. S. harbor line.

Q. On the Government lot description, you mean?

A. On the Government lot description, yes.

Q. And did you deduct anything for what you assessed separately?

A. No, we did not.

Q. You had always been assessing that property above Belknap Street, as I understand it, as Government lots?

A. All of it, yes.

Q. Did you add anything for riparian rights?

A. Yes.

Cross-examination.

By Mr. Hanitch:

Q. Let me understand you, Mr. Tiedeman. When you began to assess this Zenith property and Carnegie property you simply treated that as separate property from the property you had been assessing before under Government lots, did you not?

A. Yes.

Q. I think you testified before that what induced you to assess the Zenith property and the Carnegie property was the decision in the St. Louis court on the channel or thread of the stream question?

A. I think I put it, the improvements and the decision, but the decision was probably the leading influence. I think that is the way it was put at the time. That is my recollection of it, and I think that is correct, too.

Q. As a matter of fact, you never gave the improvements on that side of the water there any thought until this decision?

A. There weren't any.

1413 Q. Well, weren't there some improvements on the Zenith property before this decision came out?

A. I think at that time there wasn't. The dock has been built out since, that is, the main part of it.

Q. Well, the Carnegie has probably been built out since that decision but the Zenith has been there a long time, hasn't it?

A. They have been filling out: they have been building out towards the water every year. There was none assessed, anyway, taken into account up to this time.

Q. Until you got the decision, that's what suggested to you that there might be property there for assessment?

A. I think the decision was the main influence. Of course the dock being built, we became aware of that during the winter before the decision came out.

Q. Yes, but you hadn't thought of assessing it until——

A. We had our maps made I think in February, either February or March of 1913. I don't know when that decision came out.

Cross-examination:

By Mr. Fryberger:

Q. Now, was it about this time that you went over that you sent Mr. Banks, the engineer, over, engineer of the City of Superior, to make that survey and put up those points on the Carnegie dock?

A. He made that survey, I think, probably 60 days before that, about that.

Q. Probably 60 days?

A. Before I went there.

Q. He made that survey after the decision came out, didn't he?

A. I don't know.

1414 Q. Who gave him his instructions to go over and make that survey and put on these points on the Carnegie dock?

A. I don't know as anybody gave him any particular instructions.

Q. You think he just went and did it himself?

A. I think he just made the map, because he wanted the description.

Q. Who asked him to make the map?

A. I don't know; I couldn't say.

Q. How do you know he went over there?

A. I got the map after it was made.

Q. Showing the survey line on the Carnegie dock?

A. (No response.)

Redirect examination.

By Mr. Gard:

Q. You don't understand Mr. Banks put any line on the dock, do you?

A. He made a map for our department; that is, we got it after the map was completed, showing the channel and the different properties over there.

Q. Simply the map showing what was on the Wisconsin side?

A. Sure.

Q. And he gave that to you?

A. Yes.

Q. That is what you made your assessment from?

A. That is what we worked from, yes, sir.

Q. And you went over and viewed the property yourself?

A. Viewed the property, had with me the map when I viewed it.

Q. You don't know of Mr. Banks making any line on the property itself, do you, any mark on the property?

A. No, I do not.

1415 Recross-examination.

By Mr. Fryberger:

Q. You found the points there on the dock so you could tell where the property was to assess?

A. Yes, I had the plat and I could see from the plat where the supposed property was.

Q. Well, didn't you see any points there on the dock to show where it was?

A. No, sir, there was no points on the dock.

Q. How did you tell where the Wisconsin property was?

A. Took the measurement from the plat, and at that time the dock was new, each 100 foot section of the dock was marked off. A certain number of feet from what was termed the Government dock line, in to where the channel was supposed to be, we determined the portion that was in Wisconsin.

Attorney-General Owen: May it please the Court, I want to make the statement that during recess I examined maps and public documents in the State Historical Society at Madison, for the purpose of ascertaining whether there were maps of this region, including the waters of the Bay of Superior, St. Louis Bay, and the River St. Louis, that had no state boundary line marked on those maps, and I found there the following maps upon which no boundary line through those waters was indicated whatever. Wisconsin's Exhibit 56 is a list of maps of that character that I found on file in the Wisconsin State Historical Society, which is now offered in evidence.

I have consented, at the request of the attorneys for the
1416 State of Minnesota, to also say in this connection that I did find a number of maps on file there that had the boundary line marked substantially as indicated on the map that we call the Bardon map, that has been introduced in evidence by the State of Minnesota as Exhibit 13. The number of maps found there with the boundary line marked on as it is marked on that was not to exceed four or five.

Mr. Fryberger: I understand you didn't make any notation of that.

Attorney-General Owen: I didn't make any notation but that is the fact.

Mr. Fryberger: You weren't looking for maps that had the State line on.

Attorney-General Owen: I didn't make any notation of the maps that had the line marked on. I didn't find any that had any different line marked on than this.

The Commissioner: Any objection to Exhibit 56 going in evidence?

Mr. Fryberger: We practically stipulated that he might make that statement.

The Commissioner: Then the exhibit is received.

Mr. Bailey: I think we should be allowed an objection that it is

immaterial. We aren't objecting on the ground that you haven't produced the maps.

Attorney-General Owen: Just make your objection on the ground that it is immaterial, but state that you don't object upon the ground that it is not the best evidence.

The Commissioner: Received subject to the objection.

1417 Mr. Gard: Mr. Fryberger, you asked Mr. Tiedeman if Mr. Banks had put marks on the dock before he was over there. I want to know if you meant to infer that Mr. Banks put the marks, Minnesota and Wisconsin, on any dock in question?

Mr. Fryberger: All I know about that is what the testimony of Banks is, that he didn't know what his men did, but he didn't do it and didn't know it was done. Now we have our own view of those marks that are on there.

Mr. Gard: Do you claim that they were put on there by the city, by any official of the City of Superior, or by anybody acting under the officials of the city of Superior?

Mr. Fryberger: I think marks were put on the docks by someone acting under the instructions of Banks; that is, some mark was put there.

Mr. Gard: Do you claim that Minnesota—"Minn. Wis." were put on there by somebody acting under Mr. Banks?

Mr. Fryberger: I don't know, but I don't think they were. I don't think they were. I think "Minn." and "Wis." were put on there by our own men; that is what I think. And I will state further that the information we got was this, that after they made that survey the fellows that made the survey put certain points on the dock, that is, Wisconsin people, and made the statement that that was Wisconsin, or Wisconsin property to the southerly of this point, and then the question came up—I don't think this Minnesota and Wisconsin was put on there that year at all but was put on there after

1418 the assessment was made, and the Carnegie people knew that an assessment had been made, and the superintendent of the dock was instructed to keep strict track of the property that was claimed to be on the Wisconsin side of that point, that survey, so as to know what assessments they were going to be doubly assessed, and he put it on, or it was put on by someone who was instructed by the superintendent to perpetuate that mark so that they could keep track of it until the question was settled, and the letters, "Minn." and "Wis." weren't put on by authority of any officer of the Carnegie Coal Company, so far as we can find, but simply put on by some of the employees after receiving these instructions, for the purpose of keeping track of the assessment of the property that Wisconsin claimed.

Mr. Gard: You don't claim that any officer or any person acting for the officers of Superior had anything to do with putting on this dock "Minn." and "Wis."?

Mr. Fryberger: We don't know. We don't think so. We think that was done by some of our own men who were told to keep track of the points. We haven't been able to find out who did do it.

Mr. Gard: I make the request now because if it is claimed I want

to bring the people here to refute it; and if there is no claim there isn't any need of our taking up time bringing witnesses.

Mr. Fryberger: I don't want to stipulate one way or the other. I don't know; but we think our own men did it in simply perpetuating the mark that they had instructions to keep track of, but not
1419 as a state line.

Mr. Bailey: Not with any idea of a state line but simply for assessment purposes.

Mr. Fryberger: That is the information we get. But as to who the fellow was who put on "Minn." and "Wis.", we haven't been able to find out. We don't know, but we don't think it was put on for more than a year at least after the survey was made by Banks. We do claim that the surveyors of Superior indicated to our men the line that they claimed was the dividing line between Wisconsin and Minnesota, and what they were going to claim,—that that was the line. We do claim that they indicated the point on the dock but we don't think that your men put on the "Minn." and "Wis."

Mr. Gard: We have no more evidence this evening. We have a little more that we think will take about half the day tomorrow. We have one witness we have been trying to get for three or four days. We don't know whether we can get him or not. If we don't get him by tomorrow morning we will do without him. If satisfactory to you, we will adjourn to Duluth and finish our case over there in the morning.

Mr. Bailey: Suppose we occupy the rest of the time till half past four with the witness we have here.

Mr. Gard: We haven't any witness.

Mr. Bailey: We have.

Mr. Gard: All right.

1420 F. W. SARDESON was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Where do you reside, Professor?

A. Minneapolis.

Q. How long have you lived there?

A. About thirty years.

Q. Are you a graduate of the University of Minnesota?

A. Yes, sir.

Q. Were you for some time professor in the University of Minnesota?

A. About sixteen years.

Q. You graduated, I think, in 1891?

A. '91 and '92.

Q. And were professor there from what time till what time?

A. Excepting two years leave of absence, I was instructor up until 1913.

Q. What department?

A. Geology.

Q. I will ask you what work you have been engaged in since then?

A. I have been engaged in the study of the glacial drift deposits of the State of Minnesota with a view to making a land classification or soil survey, part of which is now published by the University; this work being done by the United Stated Geological Survey in co-operation with the geology department of the university.

Q. How long have you been engaged in that?

A. Up until December, 1915. Since that time I have worked privately or in a semi-public capacity on the drainage problems of the state.

Q. And during the last few years has the state and the
1421 municipalities of the state gone into the question of drainage to a very great extent?

A. Yes, sir.

Q. And is that work being carried on over the greater portion of the northern part of the State?

A. Yes, sir.

Q. And as well to a considerable extent in the southern part?

A. Yes.

Q. Were you for a time connected with the Geological Survey of the United States?

A. I am United States Geologist number 67 at the present time, but I am on leave of absence this year.

Q. Just briefly, not going into it to any great extent, state what your work is on this soil survey?

A. In order to classify the soils of Minnesota it was necessary to study the surface formations and for northeastern Minnesota we made Duluth our headquarters, so that we worked out of here in 1909, '10, '13, '14, and '15, studying all of the questions of glacial drainage and land surface conditions, pre-glacial, interglacial, and post-glacial rivers.

Q. And amongst other things for the purpose of, and perhaps largely for the purpose of, determining what crops are best suited to the various kinds of soil found throughout the state?

A. Not so much as regard to crops as to get a quick, uniform invoice of the whole state, of each kind of land, such as is known to the farmer, the object being to direct people to the kind of land which they wished to find and also to have this map used, as it is being used, by our State Experiment Station in the university, for crop experimentation.

Q. Now, in your work have you made a special and par-
1422 ticular study of glacial action?

A. Yes, sir.

Q. Just briefly outline what you have done in that regard?

A. The work on soils and geology was done genetically, that is, in the historic order of events. We traced out the manner in which the glaciers had come into Minnesota from the northeast and northwest and in what succession they had retreated from the state, what

rivers had been produced, glacial rivers had been produced at that time, and all questions connected with glacial geology. A report will be published by Mr. Frank Leverett covering the glacial geology. He is a United States Geologist, with whom I was associated.

Q. And lives in Ann Arbor?

A. Ann Arbor, yes.

Q. And have you in connection with him and also on your own account made a considerable study of what is known as the tilting theory?

A. Yes, sir. Differential uplift, we call it, tilting.

Q. Just state briefly to what extent you have made a study of that and over what period?

A. We determined the tilting from the shores of Lake Agasiz, glacial lake Agasiz, the red lake beaches—there is beaches extending from the head waters of the Mississippi River around past Red Lake, up to Vermillion Lake and International Falls, going a distance of some 200 miles, and enabled us to calculate the amount of differential uplift since the time these beaches were made. We also worked the beaches from the Minnesota boundary across Wisconsin. I went only as far as Ashland myself. And we worked them along from Duluth along the North Shore, and I went as far as Two Harbors for my part. Mr. Leverett went further.

Q. The tilting is from northeast on a line northeast and southwest and at an earlier date the north shore of Lake Superior
1423 was approximately 8 feet deeper down under the load of ice, and as the ice load was removed, that part of the country raised. The retreat of the ice across Lake Superior northeastward produced lakes, one of which is known as Lake Duluth, and the beaches in Duluth are known as "Boulevard Beaches" because the Duluth boulevard runs upon them. Then we have the second system of beaches, and then the third one, known as the Nippising. This was identified by Leverett, 15 miles east of Duluth, and by myself, and he confirming it, at the mouth of Knife River, about 15 miles, on the shore; that is the point at which the lowest beach, the Nippising Beach, disappears under the surface of the lake. There is a dip of about half a foot to the mile on the Nippising Beach, and allows a calculation of the depression here in this St. Louis Bay, of from 4 to 8 feet since the Nippising Beach was formed.

Q. You say a depression in St. Louis Bay or the bays up here——

A. The depression is common——

Q. The depression under what?

A. Differential uplift caused the northeast shore of Lake Superior to rise and the southwest shore to relatively sink, and the position of the outlet is such that the part to the northeast of the line, passing 15 miles, from a point 15 miles east of Duluth to a point 15 miles north of Duluth, and the shore, all northeast of that, the shore was raised and the surface of the water lowered in relation to the shore, while to the west of that line the water rose upon the shore and the land is relatively depressed.

Q. And have you made a special study of the waters here
1424 which are westerly of Minnesota Point?

A. Yes. We looked that over because of some inconsistencies. It was difficult to understand the explanation usually given of Minnesota Point. The explanation given as to the long shore transportation from the East brought in sand and gravel and built a spit from the Wisconsin side, also down the Minnesota side, shutting off that part of the lake which is now known as the bay. If the spit was built as has been explained, it was not in proper place mechanically, but by understanding that there has been a depression of some 4 to 8 feet we can understand, then, that that Minnesota Point and Wisconsin Point together was built as a spit by the lakeshore, in that place where it now is. You get that more clearly if I give you the sequence of events, I think. The St. Louis Bay and St. Louis River valley is a valley older than the invasion of the last glacier. There was a river valley, not of the whole St. Louis as now, but probably a smaller river emptying into the Lake Superior basin, and that is also a drowned valley, and the glacier came through Lake Superior from the northeast and pushed out to the southwest as far as Mille Lac—McGrath—and after retreating, these lakes formed. The glacier did not destroy the old valley but left it with a little erosion, that is, rubbing off, and a lot of deposits upon it, so that the valley appeared to have deeps in it, depressions, which are now seen in the bay. The explanation which had been given for these deeps was that after the glacier had retreated, the river had flowed at a lower level, into the lake at a lower level and made that whole valley. This explanation is wrong to the extent that
1425 it explains the origin of the valley after the glacier, instead of rightfully, before the glacier. Any buried channel in the bay is older than the last glacial invasion. There is a deep around Rice Lake and there are others from the mouth of the St. Louis River down to the inlet, as I think you call it, between Lake Superior and the bay, which apparently have been preserved, prevented from filling with sediment, partly because they have served the purpose of currents in the bay. The rest of the bay is filled with mud more or less and is filling now at the present time from south to north by the St. Louis River. I can see no reason for assuming that the mouth of the St. Louis River was ever further towards Lake Superior than it is now.

Q. And where is the mouth of the St. Louis River as you understand it now?

A. The St. Louis River builds a delta and as it approaches the edge of the delta it forms distributaries, about three of them. One I have heard this afternoon, called the cut-off, and there are two others going around Big Island. The river in that part is building levees, banks, and setting itself in. I should say there are two or three distinct mouths to the river.

Q. As I understand you, you place that there about Big Island?

A. Yes, between Big Island and, what do you call it? Grassy Point.

Q. And under your description, as I understand you, you think

that the mouth of the river, if it was ever changed, was in the past further up——

A. Further up.

1426 Q. —then than it is now?

A. Yes, sir.

Q. That is, at one time how far back can you tract it; how far back from Big Island, we will say?

A. Well, it would be at least a mile. It may have been originally slack water nearly up to Fond du Lac.

Q. And what if anything had you to say with reference to how these waters up to Big Island are control-ed, that is, whether they are control-ed by the waters of the lake or by the waters of the river and what effect that has on determining the mouth?

A. That could be determined by the engineer better than a geologist, but from my personal observation you have a series of basins; Lake Superior is, of course. the largest. Then the next one I think you call St. Louis Bay. Then there is the basin above the point where the railroad crosses, running up to Grassy Point and above Grassy Point and the Big Island there is another basin. Now it is a general principle that where you have a succession of basins with valleys between them and rivers flowing into one of them and one driving water back up into the other that there will be some oscillation of the water. In this case, of course, more water going out of the small basins into Lake Superior than from Superior Bay into the little ones. Also another principle which I would recognize is this, that a large basin overflows into a smaller one faster than a small one does into a larger one. If you take two unequal sized basins with an opening between them and tilt them, it is quite apparent the larger one will overflow more quickly into the smaller and the smaller one less quickly out. That leaves me in

1427 doubt as to which way the erosion is coming into the bay, whether it is the quick current going in or the slower current going out.

Q. You spoke of what you call deeps in these waters?

A. Yes.

Q. Are you familiar with the Meade map?

A. Yes, sir, I have seen it different times.

Q. And have you looked at what some of the testimony has indicated as a channel up around Grassy Point in here (indicating)?

A. Yes, sir.

Q. Are those what you referred to as deeps, that is, the soundings which show somewhat deeper water than others?

A. Yes. Here is a remarkable one around Spirit Lake, right around that island. There is a deep place which is not explanable, so far as I can see, except as a glacial depression. The one known as Pokegama is a deep that might be explained in either one of two ways, either to post-glacial or pre-glacial, but the width and depth and length of it is rather discordant—I should rather think it was post-glacial. Now coming through here (indicating) from around the island, there is a deep in there, running around the shore.

Q. What you are pointing to is the line of deep soundings marked H on Minnesota's Exhibit 1, is it?

A. Yes.

Q. And westerly of that?

A. Yes. Now that looks very much like a river. It has all the dimensions of St. Louis River, if you consider its branches and the crossings that run into it, but one frequently finds such features as that right out on the prairie where there is no river. They are remnants of inter-glacial stream which the glacier did not entirely obliterate.

1428 Q. In your opinion is that line of deeps that you speak of due to there having been what some of the witnesses have termed a drowned river or is it due to glacial action?

A. It is an interglacial river channel, probably, which was not entirely destroyed by the glacial action and which has not been filled because the run of the currents doesn't load mud into it.

Q. Is it proper to speak of a drowned river so far as this water up here is concerned?

A. I am not able to find any reason for speaking of any part of the bay below, much below Big Island, as a drowned river, although it is a drowned valley.

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Q. I think in one answer you gave yesterday, Professor, you indicated that the same condition that we find in the bottom of the bay up there might be found on prairies. Just explain that a little more fully, will you?

A. The whole surface of the country was drained by natural valleys and draws before the glacier came on, and this last glacier made a thin deposit over the surface, which is not sufficient to entirely disguise the old drainage. Even small channels sometimes remain quite distinctly and looked very much like rivers, for half a mile or a mile or so and frequently contains small lakes.

Q. Would it be proper to liken the bed of this mud to a slough in a prairie?

A. Yes.

Q. And you say such condition as that existed before the

1429 glacial period?

A. There was a valley there before this glacier.

Q. About how many thousands or millions of years before, do you locate the glacial period?

A. Yes, I have, because I happened to be the person to review that subject of St. Anthony Falls. The recession or retreat of St. Anthony Falls, which was first calculated by F. H. Winchell and then Niagara Falls, which has been calculated since, and the two pieces of evidence agree, indicates that the Falls of St. Anthony have retreated a certain distance in 8,000 years, and at that time there was still ice up in Canada sufficient to hold Lake Agasiz and Lake Algonquin in her bed; that a period twice that long ago the falls were down by Fort Snelling and there was ice then in the

Lake Superior basin here; three times that long ago the ice was at St. Paul.

Q. So you locate the glacial period somewhere from eight to twenty thousand?

A. Yes. That's it, the last glaciation period.

Q. Then as the glaciers disappeared, just what action took place with reference to the head of the lakes and with reference to this tilting? Do you think that is when this tilting came in?

A. Yes. The differential tilting takes place gradually as the glacier was melting away from the North American continent. The glacier appeared to have retreated essentially in a northeasterly direction and the differentiation is towards the northeast. The relative lowering of the land is towards the southwest.

Q. And that took place as the glacier disappeared, and the tilting was a gradual one from up here at Fond du Lac, we will say, about how far into Lake Superior?

1430 A. In each case it runs as far up as the edge of the ice where the glacier stood. Of course, in the oldest glacial lake beaches, the beaches end at Ashland, on the west shore of Lake Superior and on Lake Agassiz they end only a little ways up in Minnesota below the Red Lake, the first of them, but the later beaches go all around the Great Lakes.

Q. What can you say as to these waters above Minnesota and Wisconsin Points, being lake or river, as being controlled or covered by either the waters or the river under the waters of the lake?

A. You mean at the present time?

Q. Yes.

A. Any time the flood sends muddy water often out into Lake Superior, but the river is not dominant or does not control farther than to what I call the mouths of the river right at Big Island. On the other hand, the storms of Lake Superior, reverse the current and make what I think they call tidal actions, clear up to Fond du Lac or nearly up there, but the lake is dominant only up to Big Island.

Q. And there is where you locate the mouth of the river?

A. There is where I locate the mouth of the river.

Q. At the present time or within the last hundred years, I take it?

A. There is where the width of the bay——

Q. Is that right?

A. Yes. That's where I locate the mouth of the river.

Q. And is or is not your conclusion due partly to the fact that the waters up as far as Big Island are controlled, as you say, by the waters of the lake?

A. Yes, sir.

Q. That is, those waters are dominant?

1431 A. Yes, sir; that is up to Big Island the bay is a part of the lake.

Cross-examination.

By Mr. Gard:

Q. What are the characteristics of a river?

A. Well, a river is a body of water that is long, relatively narrow, and has a sloping surface, and is controlled by banks.

Q. Is that all the characteristics that you attribute to a river?

A. Having a sloping surface means it has a current, of course. If the surface of the river slopes, of course there is a current.

Q. What observations have you made of the waters of St. Louis Bay here?

A. Well, we made this town our Sunday and rainy weather headquarters while we were working in Minnesota and neighboring parts of Wisconsin in 1909, for a month, and in the summer of 1910, and in 1913, 1914, and 1915, and on every occasion we studied beaches there, old glacial beaches; went down on Minnesota Point, took a boat up to Fond du Lac, walked along the railroad tracks up to the docks, went up to the new Steel Plant where they wouldn't let us go in, went over to the Duluth club, I think they call it, and were courteously given our dinner, and from every point of view I did personally and with others study the bay.

Q. And that dinner helped you out in forming your conclusion I suppose?

A. It gave me the impression that there were some nice courteous people living on the bay.

Q. Have you observed the rise and fall of the water in these bays?

A. Not closely, no, sir.

1432 Q. Do you know how much the water rises in St. Louis Bay?

A. No, I haven't that in inches at all.

Q. Do you know whether it rises at Fond du Lac from the effect of the rising of the lake?

A. Yes, there had been a rise of the river a little below Fond du Lac when to my knowledge there had been no rise on the river above; for that reason I inquired why there had been a little rise of water and the answer given me was that came from below; that is all I know about it.

Q. You didn't investigate it yourself?

A. That was sufficient investigation. I didn't think I needed to go further.

Q. You never took measurements to find out how much the rising and falling of the water in the lake will affect the water up at Fond du Lac?

A. No, sir.

Q. Don't know?

A. Don't know, no, sir.

Q. And you don't know how much it will affect it in the vicinity of Big Island?

A. No, sir, not from engineering measurements.

Q. There isn't but one kind of measurements, is there?
A. Yes.
Q. More than one kind of measurement?
A. Yes; yes. You can weigh a horse and you can estimate him from expert—from eye test. The geologist sometimes neglects or rejects exact measurements as being misleading and make our measurements by other calculations.
Q. Do you use inches and feet?
A. Oh, yes, very frequently.
Q. Would there be any two ways of measuring the rise of the water?
A. Yes. One would be by the current with a cross section of the channel showing how much rise would need to be made in order to force a certain rate of current.

1433 Q. Now you say you never measured it from engineering measurements. What kind of measurements, if any, did you measure it by at Big Island?
A. I didn't make any measurements at all.
Q. Then why did you say you never made any measurements from an engineering standpoint?
A. I looked at the shore and at the vegetation and at the conditions of the bay as we went along in a boat, to see whether the water had stood up on the rushes, see whether the waves struck that shore as the boat went by, the same as the waves had been striking certain points a day or two before that, and thus by eye measurements I could determine that there were fluctuations there.
Q. Could you tell on the bank whether the fluctuation was from a rise, from a freshet in the river or whether it was a rise from backing up on the lake?
A. I could when I had been working on the river above and knew that there had been no freshet.
Q. Did you make any observation as to the rise of the water in St. Louis Bay out here in the vicinity of the Northern Pacific bridge or anywhere between the Grassy Point bridge and the natural entry?
A. No.
Q. Did you ever make any observations to determine the current of the river in Superior Bay out here?
A. I didn't even determine that there is a current, no, sir.
Q. Did you ever make any observation to determine whether there is a current or not?
A. Probably not, because I don't remember that I ever specifically observed it.

Q. Did you ever make any observations anywhere to de-
1434 termine the current of the river?
A. You mean the rate of flow?
Q. Yes.
A. In a general way, yes, sir.
Q. Where?
A. On the boat.
Q. At what place?
A. Well, as we went up or down the bay.

Q. At what particular place, now, did you make an observation to determine the current?

A. Well, I threw a chip in the stream at Fond du Lac to see how fast it would go and then I observed floating objects in the bay to see how fast they would move.

Q. When did you do that?

A. Oh, when we were around the bay.

Q. Now, at what part of the bay did you throw an object in the bay to see how fast it moved?

A. I stood on the bridge once.

Q. What bridge?

A. The bridge where the street-car goes across, wagon bridge; was a foot, and wanted to get across the bridge here and had to wait for a boat to come out, and so I dropped an object into the water to see which way it would move. There was a flood at that time and muddy water was ging out into Lake Superior and there was a perceptible current. It was disappointing to me, not the current that I had expected.

Q. How many chips did you throw in?

A. Oh, well now, it may have been only one, but I think we threw in, each one.

Q. How many different times did you throw chips in?

A. I don't remember more than that once.

Q. Just that one time?

A. Yes.

Q. Did you ever test the current of the river anywhere below Fond du Lac?

A. I don't think I did, not that I distinctly remember?

1435 Q. Then you tested the current at one time from the interstate bridge, by throwing a chip in the water?

A. Yes.

Q. And you tested one time at Fond du Lac?

A. Yes.

Q. Did you ever test it any other time or at any other place?

A. You are now calling for engineering tests?

Q. I am calling for tests of the current?

A. Oh, I probably did.

Q. Where?

A. Well, I was not interested in the subject at that time except in a general scientific way, and made no record, and therefore my memory isn't sufficiently clear to justify me in testifying.

Q. When did you become sufficiently interested in this matter to testify?

A. Oh, when I was called up on the telephone and asked what I knew about the bay, a few days ago.

Q. Have you made any observation since that time?

A. No, sir.

Q. You pointed out yesterday a channel in the waters above Grassy Point, didn't you?

A. Yes, sir.

Q. And below Big Island?

A. That is the same one, you mean between Grassy Point and Big Island?

Q. Yes. You said you called that a deep, didn't you?

A. I called that a deep, yes.

Q. Did you ever test the current in that channel?

A. Oh, no, certainly not.

Q. A current is one of the characteristics of a river, isn't it?

A. No, sir.

Q. Not one of the characteristics?

1436 A. No, sir. Rivers have current but lakes do have currents also.

Q. Then you will change your evidence. You said a while ago that a current was one of the characteristics of a river.

Mr. Fryberger: I don't think he said that. He said it had a sloping surface.

Q. Now, do you change that evidence or not?

A. No, sir.

Q. Is a current an evidence of a river or not?

A. It would be evidence of a river but not proof.

Q. But no proof of a river?

A. No, sir, not necessarily.

Q. Then why did you mention it as one of the charactertistics?

Mr. Bailey. You asked him to describe a river.

Q. I asked him to describe the characteristics of a river. Why did you mention it as one of the characteristics?

A. Because I saw that you did not understand that a sloping surface means that there would be a current.

Q. Do you mean now to testify that a current is a characteristic of a river or not?

A. Why, rivers with sloping surfaces have currents, of course.

Q. Is that a characteristic of a river, then, a current?

A. A characteristic, I would understand, is something that distinguishes one thing from another. There are currents in lakes and bays and in the ocean.

Q. There are banks also, aren't there, on lakes and oceans, aren't there?

A. Yes, sir.

Q. Then what is it a river has that a lake doesn't have?

1437 A. It is a long body of water, comparatively narrow, with sloping surface; a lake is a broad body of water permitting a differential or circular currents and essentially doesn't have a sloping surface.

Q. Do you know whether there is a sloping surface on the St. Louis River down to the entrance, the natural entrance here?

A. From the action of the water in the bay, the slope of the bay isn't constantly in one direction but it is sometimes in and sometimes out.

Q. Do you know which way it generally is?

A. Oh, I don't know. I could tell you but I don't know from personal observation.

Q. Then what characteristic is it that you attribute to a river that you don't attribute to a lake, except length?

A. In a river there is not sufficient width for circular currents within the channel, and for that reason there is no compensation and the river necessarily has a sloping surface. In a broader piece of water, lake and bay, there may be a strong current, but there is room for a return current which compensates.

Q. Are you familiar with Lake Pepin?

A. Yes, sir.

Q. Do you term that a river or a lake?

A. Lake Pepin is a channel of an old river which has been dammed across and the bed of the river has been flooded, producing a greater width than formerly, and it has sufficient width for compensating currents to operate and for that reason I should call it a lake.

Q. Do you know how the courts regard Lake Pepin?

A. No, sir.

Q. Don't know that?

A. No, sir.

Q. What compensating currents are there in Lake Pepin?

A. Do you mean for me to say just specifically where they are?

1438 Q. You can answer it in your own way if you want to.

A. They would be to the right and left, or to the right or to the left of the inlet.

Q. Do you know that they are?

A. I have never personally measured them, no, sir, but I have always understood that they are.

Q. What do you mean by compensating currents?

A. Where a river discharges into a lake or into the sea the river may carry, if it is a strong river like the Mississippi, ten, fifty, two hundred or three hundred miles into the sea, but there is a return around to the right or left to overcome the friction which the river has against the sea water or lake water in carrying more of it along all the time, a return of the water, a circulation which is continuous and keeps the surface nearly level.

Q. Do you know whether that's true in Lake Pepin or not?

A. Now my knowledge of that subject is based solely upon the understanding. I never knew it to be questioned; have always taken it for granted that there was.

Q. Did you say you were connected with the State Geological work?

A. In co-operation—co-operatively, yes.

Q. Has it been a part of your duties to observe the rivers of the state and describe their characteristics?

A. No, it has not been my duty to describe the characteristics of rivers, but it has been incidentally necessary for me to observe them

and to understand their movements in order to interpret the geological evidence I was seeking.

Q. Does Lake Pepin border on Minnesota?

A. Yes, sir.

1439 Q. And you never have observed that even?

A. I have been on the lake.

Q. But you never observed these compensating currents?

A. I never measured them, no sir.

Q. Did you ever observe them?

A. I don't think they would be detectable by the naked eye.

Q. Are you familiar with the Meade map?

A. I have seen it two or three times in my life.

Q. I show you a copy of the Meade map. You observe the St. Louis River in the vicinity of Spirit Lake, do you?

A. Yes, sir.

Q. Is there a well defined channel at that point?

A. Yes, sir, seems to be.

Q. What are the soundings indicated on this map?

A. Thirty feet.

Q. One of them. What are the other soundings?

A. Twenty-two, twenty-seven.

Q. Can you trace that channel down further than that?

A. Yes, sir, it goes down to the end of Big Island and then divides.

Q. And which way does the main channel extend from that point?

A. I should call the shorter channel the main one. Other things being equal, I would call the shorter channel the main one.

Q. Does the volume of water have anything to do with your classifying channels as main or otherwise?

A. That's one of the other conditions which I said, if the other conditions were equal, I would call the shorter channel the main one.

Q. Do you know anything about where the biggest volume of water flows northerly or southerly of Big Island?

A. I don't know.

1440 Q. Don't know anything about that?

A. Except what I see on the map.

Q. You don't know anything about it from observation?

A. Not from actual measurement, no, sir.

Q. Doesn't the map indicate that the largest channel runs northerly of Big Island?

A. The channel northerly of Big Island is the wider, the other is the deeper. They look to me nearly equal. The big one has a measurement of 21, 27, 24; the other at the elbow has 31 feet.

Q. You point just at the elbow. What are the soundings just below the elbow?

A. Twenty, 22, 22, 20, 22, 17, 15, 16, 17, 23, 17, 20.

Q. You find the channel on the northerly side of that island, then, about as deep as you do on the southerly side, don't you, except just at the bend?

A. The one on the northerly side goes down to ten feet.

Q. And then it goes up again, doesn't it?

A. It becomes deeper, yes.

Q. And the other one goes down, runs out, doesn't it, down below Big Island practically?

A. Yes, seems to spread out into the bay.

Q. Now the one northerly of Big Island continues around Big Island, doesn't it?

A. It seems to me from the map that it splits there to the southwest of Big Island into two channels or two outlets.

Q. Well, now, where do you say it splits?

A. About here (indicating) it seems to divide.

1441 Q. And where you say it divides there is six feet of water, isn't there, on the bank there where you say it divides?

A. Yes.

Q. And there is 12 feet in the channel?

A. No. There is 7 in one channel and 6 in the other.

Q. Now, that's at the side of the channel, isn't it?

A. There are two figures 7, one on each side of the channel; there is a figure 14 and a figure 23, but the 7 stands between them.

Q. The 7 is on the side there, isn't it, outside of the channel?

A. I think the 7 is a little outside of the main depth of the channel.

Q. You see these figures running down there, 22, 26, 23, and in the 20's down around Big Island, don't you?

A. Yes.

Q. And extending on to the southerly of Big Island, 17, 17, 24, 27, don't you?

A. Yes, sir.

Q. And then a shallow place and then there is 20, 20, 19, 21, 20, 21, 16, and in the 20's down around Grassy Point?

A. The map shows a channel running in the bottom of the bay down where you indicate.

Q. Around Grassy Point?

A. Around to Grassy Point, yes, sir.

Q. And around Grassy Point?

A. And around Grassy Point, yes, sir.

Q. Now then, you say that the mouth of the river is in the vicinity of Big Island, don't you?

A. Yes, sir.

Q. Where do you place the mouth of the river?

A. About here (indicating) and there (indicating).

Q. You indicate——

A. The southwest side of Big Island, and to the easterly

1442 point of Big Island.

Q. You find just as deep channel below that point, don't you, on the north side?

A. Yes, sir.

Q. And you find a channel just as well defined from there down, don't you, as you do at that point or above that point?

A. Essentially so, yes.

Q. In fact, it is better defined down in the vicinity of Grassy Point than it is at that point, isn't it?

A. No, the channel isn't as well defined in the bay as it is up by Spirit Lake.

Q. I am asking you if this channel that runs near Grassy Point, above Grassy Point, isn't as well defined as it is above just where you pointed?

A. It is by its depth, yes.

Q. In what way is it not, then?

A. It has no banks.

Q. Will you look and see how high the banks are, that is, how deep the water is on the banks there?

A. You mean in the bottom of the bay?

Q. Yes, sir.

A. It goes from one place, from 25 feet up to 5 feet.

Q. That is 5 feet is on the bank there of the channel?

A. It's on a sand-bar, yes, apparently.

Q. It's on the bank of the channel, isn't it?

A. No, that is the bottom of the bay.

Q. Well, it's on the side of the channel, isn't it?

A. It's on the side of the channel, yes.

Q. And there is shallow water on either side of that channel, isn't there, down in the vicinity of Grassy Point, above Grassy Point?

1443 A. At that point that you indicate it is so, yes.

Q. Then what feature does that channel lack at that point that it has above Big Island?

A. It is not controlled by banks, shores.

Q. It has banks, hasn't it?

A. There are differences in the bottom of the bay which make a submerged channel, under water channel, but there is no carrying of the bottom of the bay up to the surface so as to prevent the channel from overflowing on either side.

Q. Is there any carrying of the bank up to the surface of the water just above Big Island?

A. There seems to be from the map. I observed it that way.

Q. What do you regard this that I am pointing at here, water or land?

A. Marsh.

Q. Do you know whether it is marsh or not?

A. I think I saw that it is marsh.

Q. What do you regard Spirit Lake?

A. That is one of these deeps that I spoke of.

Q. What do you regard the water just south of Spirit Lake, between Spirit Lake and Big Island?

A. Well, there is a lev-y there between Spirit Lake and the channel south of Big Island.

Q. A what?

A. A lev-y built by the river.

Q. How wide is the water there?

A. I didn't understand.

Q. The water of the river extends out into Spirit Lake there and

there is no land between Spirit Lake and the river, between—or little below Big Island and Spirit Lake, is there?

A. The map shows land there.

1444 Q. At this point here (indicating) does the map show land?

A. The map shows this is land here (indicating).

Q. How about a little further down?

A. This further to the northwest of Spirit Lake, there is a water channel going from the lake out to the main part of the bay.

Q. You call that a channel?

A. Yes, sir.

Q. How deep is it?

A. Why, it is about 5 feet, 7 feet, 8 feet.

Q. It is just open water there, isn't it?

A. Yes, sir, but that's what I mean by a channel.

Q. Then why didn't you speak of the open water down below there as channels?

A. We speak of a channel as open water that has some sort of bounds defining it, making it necessary to consider a length as greater than the breadth, and I should speak of this bay down here, Superior Bay, as in a broad sense a channel.

Q. You would speak of Superior Bay as a channel?

A. Yes. There is a channel runs along here, too. English channel is a familiar one.

Q. Is that what you are talking of now when you speak of channels?

A. When I say channel I take into consideration all channels. If you mean river channel, I have misunderstood you.

Q. What do you regard the deep water down opposite Grassy Point?

A. I understand that is a channel.

Q. What kind of a channel?

A. Well, it is a channel in the bottom of the bay.

Q. Is it true that a river in its circular course will make the channel near the outer circle, outer part of the circle?

1445 A. Yes, in the bend of the river.

Q. The deep part will be at the outer part of the circle, won't it?

A. Yes, sir.

Q. And where that comes in contact with the bank the deep water will be next to the bank, or near the bank, won't it, where the current of the river comes in contact with the bank in its course?

A. Yes, sir, in making meanders, the shallow water is on the smaller curve and the deeper water would be on the outer or larger curve of the meander.

Q. The river there as it comes down runs quite close to the Wisconsin shore, doesn't it?

A. It appears so on the map, yes, sir.

Q. Do you find that that is a deep place in the channel, at that point?

A. Yes, sir?

Q. Now, don't you know the current has washed that cut at that point and made it deep just as it does all rivers at such a place?

A. I have no doubt that the current is having the effect of deepening or keeping the depth of these channels in the bay.

Q. You spoke of the formation of Wisconsin and Minnesota Points?

A. Yes, sir.

Q. I don't think I got your idea of how you claim Wisconsin Point was formed, and Minnesota Point was formed?

A. It was made by the action of the waves in wearing away the shore to the eastward and then by an oval movement of the wave up the shore and down again. It carries the materials along to a point where through the relation of the direction of power to the shore the materials are thrown out into the lake, building up
1446 first a point running out into the lake, called a spit. This spit began at the east end of the Wisconsin Point and by carrying the materials to the end of the point a spit was produced from the Wisconsin shore across to the Minnesota shore. There is to a less degree an action from the Minnesota shore meeting the one from the Wisconsin side.

Q. You think, then, that Wisconsin and Minnesota Points were started at Wisconsin shore?

A. Yes, sir.

Q. Have you examined the kind of material that the point is formed of?

A. Yes, sir, made of sand and gravel.

Q. What?

A. Yes. I have been out there, seen sand.

Q. Is it all sand?

A. I saw nothing but sand.

Q. You didn't find any gravel?

A. Well, sand carries some gravel, yes.

Q. Does that sand carry gravel or not?

A. Why, you mean in there——

Q. I mean anywhere on the point does that sand carry gravel or not?

A. That what I saw was pretty fine sand.

Q. Well, did you find any gravel anywhere on the point?

A. Let me see. No, I think nothing larger than could be classified as sand.

Q. Then so far as you know the point is all sand and there isn't any well defined gravel on the point?

A. Oh, I have never examined the poin in detail in the way in which your question implies.

Q. But still you undertake to testify as to its formation?

A. Certainly.

Q. Without examining the characteristics with reference to
1457 the material at all?

A. Yes, sir, just like I can tell a horse from a cow.

Q. And that's about all you know about it, then. It looked to

you like something and you simply jumped to the conclusion it was something?

A. I didn't jump to a conclusion.

Q. You must have jumped to a conclusion if you didn't examine the material it was formed of?

A. I examined it as much to determine what the materials were as I would examine a cow to know it was beef. I made an eye examination.

Q. Where did you find any gravel?

A. I wasn't looking for gravel because it is immaterial.

Q. You weren't looking for the character of the material, then?

A. Yes, I was.

Q. Did you find any gravel anywhere on Minnesota Point?

A. I don't remember that I did. If I did I made no note of it.

Q. And it didn't cut any figure to your mind?

A. Not at all.

Q. Do you claim to have discovered a new theory with reference to the formation of these points down there?

A. No, sir; no two geologists differ on that, I think.

Q. No two geologists differ on that, you say?

A. I don't think—I never heard of any other explanation for that point.

Q. Did the St. Louis River have anything to do with the formation of the points?

A. In the later stages it helped hold this break through the point at the passage from Lake Superior to the bay.

Q. Did it have anything to do with the formation of the point?

A. No, sir.

1448 Q. None at all?

A. Not that I can see.

Q. Why didn't a point form at some other place, then, in the lake the same way?

A. They do form around the lake at other places.

Q. At what other place like this?

A. North of Chicago, for example, such points form out into the lake, a common occurrence.

Q. Is that anything like Minnesota Point?

A. Scientifically it is the same thing, although it doesn't extend from the side at that angle, that is all.

Q. Did that look like beef to you, then?

A. Sure.

Q. Looked like beef to you?

A. Yes, sir.

Q. Scientifically or just looking at it generally speaking?

A. Why, I see these spits and bars so frequently that it is a matter like your meeting men.

Q. Name another place on Lake Superior. You haven't named any place on Lake Superior where a point like this has formed.

A. In the first place, there are no two spits that are exactly alike and I couldn't say there was another one like this exactly, anywhere else in the world.

Q. Do you know anything that has the characteristics of this?

A. There are plenty of spits around Lake Superior. They occur around all of the harbors.

Q. You said you looked at this point to determine what it was like you would look at a horse, to determine a horse or a cow?

A. Yes, after thirty years of previous knowledge.

Q. Where did you find anything else that looked like this point on Lake Superior.

A. Why, I didn't understand your question, sir.

1449 Q. You certainly understand my question when I ask you where you find any other point that looks like Minnesota and Wisconsin Point?

A. I do not understand what you mean by saying "looks like it."

Q. You told me that you classified it the same way you would classtify a horse or a cow?

A. Yes.

Q. Well, now then——

A. There is a point immediately above that in the bay that looks like it but isn't the same.

Q. You mean Rice's Point and Grassy Point?

A. It looks like that to you, but to me the words "looks like that" have a scientific——

Q. In other words you claim some superhuman knowledge there, is that right?

Mr. Bailey: Do you want to know where there are some other spits; is that what you mean? He says he doesn't know what you mean.

Q. I am asking him to point out on Lake Superior any other piece of land that looks like Minnesota Point and Wisconsin Point.

The Commissioner: You mean by that, as formed by the same forces?

Mr. Bailey: Geologically looks like it to him, that's one thing. If you mean looks like it to the ordinary man, that is another thing.

Q. He may answer it as he likes. He has explained himself what he meant.

A. To me all the spits around Lake Superior look like this one.

Q. Where do you find them?

A. At practically every harbor, there is one. There is one river on the North Shore of Lake Superior that hasn't the spit and bar, is called Temperance River. They are such a common occurrence I would be surprised to go to a harbor and not find then.

1450 Q. You say at the mouth of a river?

A. Yes, and bays, wherever the action of the shore, along the shore, is shortening the shore, it cuts across the dominant point and builds embankments and spits.

Q. Where is it there is what you call a spit that there isn't the mouth of a river there?

A. I am honest with you. I don't understand what you want.

Q. All right. You said these spits occurred at the mouths of rivers, didn't you?

A. Yes, sir, they often do.

Q. Is there another place that you know of any spit on Lake Superior that isn't at the mouth of a river?

A. Oh, yes.

Q. Where?

A. I saw one up at Two Harbors.

Q. Is there any river there?

A. Not in relation to that spit, no.

Q. What place in Two Harbors? Where do you mean, now?

A. Now you are taxing my memory regarding points along Lake Superior. If you had a map before me, detailed map, and my note book, I could point them out to you.

Q. You can't tell me, then, where it is in relation to Two Harbors that this spit is that you spoke of with relation to a river?

A. When I was up there in 1910, looking along the rocky shore there for beaches, there are here and there along the shore what to us is a plain case of spits. They are small, of course, as compared to Minnesota Point, but they are distinct.

Q. Can you name now where this spit is at Two Harbors?

A. The spit has no name. They are so common.

1451 Q. I am not asking you for any names. I am asking you where it is located with reference to Two Harbors, the spit that has no river?

A. No. I don't remember definitely enough to be sure of my ground, and name one for you.

Q. How much do you claim the land has fallen or sunken in the harbors here at Duluth and Superior?

A. About 8 feet. That's a large estimate.

Q. In what length of time?

A. Oh, possibly two or three thousand years.

Q. If the land should rise 8 feet you would have a well defined river in St. Louis River running out into the lake, wouldn't you, out of the natural entrance?

A. If it rose 8 feet, according to this map, there would be no water run out at all except what overflows from one deep to another.

Q. That is your answer, is it, that there would be no water running out at all, if the land should rise up to its former height, there would be no water running out at all?

A. No. I did not say that. I said except what overflows from one of these deeps to another.

Q. Now answer the question. If the land should rise up to its former height, 8 feet higher than it is now, wouldn't the St. Louis river be a well defined river out to and through the natural entry?

A. If the elevation was 8 feet there would be no continuous river until the water had eroded a new channel at such places as deeps had not already connected in the bottom of the bay.

Q. Where is such a place?

A. Right here (indicating) on the map, across the middle of St.

Louis Bay. There seems to be a sand-bar there. Nothing
1452 that could be called a channel or beginning of a channel.

Q. There is 8 or 9 feet of water, isn't there, down through St. Louis Bay?

A. There seems to be 8 feet there (indicating).

Q. Nine feet, isn't there?

A. Seven, 8, 8, 8. It doesn't seem to exceed 8 across that line there (indicating).

Q. Now, then, would there be, aside from St. Louis Bay there would be a well defined channel above Grassy Point, wouldn't there?

A. No, it would be shut off there (indicating).

Q. You see 12 feet there, don't you?

A. Yes. And there is 7 and 8 feet right there (indicating).

Q. That is outside of the channel, isn't it?

A. No, sir, I thought that was in the channel.

Q. Do you see twelve feet there (indicating)?

A. Twenty-seven——

Q. What is it there?

A. It looks like 14.

Q. Then there is a way for it to connect there, isn't there?

A. There are two eights there closer together than these two figures here.

Q. We had a man here from Detroit who testified that that Meade map showed 12 feet of water there.

Mr. Bailey: No, he didn't testify to that, Mr. Gard.

Mr. Gard: Yes, he did testify that there was 12 feet of water there.

Mr. Bailey: Not the point that you are pointing to.

Mr. Gard: He testified that there was 12 feet of water at that point.

Mr. Bailey: Mr. Gard, I submit you should make an accurate statement. He testified that the contour lines were drawn to
1453 show 12 feet. And he also testified that an engineer in drawing contour lines if he had 12 feet on one side and 15 on the other and 6 and 9 the opposite way, would draw the lines across there regardless of these figures——

Mr. Gard: Mr. Bailey, I think, there isn't any need of your interrupting here.

Mr. Bailey: I shall interrupt unless you make an accurate statement of what you are attempting to quote, and I state to the witness now that what counsel says is not my recollection of the evidence.

Mr. Gard: Is your recollection going to govern here?

Mr. Commissioner: Mr. Gard, just ask your question.

Attorney-General Owen: There can't be any question but he has the right to assume——

Q. Assuming that at this point that you speak of there is 12 feet of water, would there not be a well defined river down through and past Grassy Point if the land should rise to its former height, which you say was about 12 feet above its present level?

A. There would be a tendency for the river to flow from one of

these deeps to the other and in the course of time it would establish a channel, probably, along that line.

Q. Aside from that point don't you find more than eight feet of water all through that channel down through Grassy Point?

A. There is, as I have already said, an apparent channel passing around that way.

Q. Well, it is more than 8 feet deep, isn't it?

A. Most of the places it's more.

1454 Q. Do you find any place now except the one you pointed to?

A. Beg your pardon. You pointed to that point. I don't think I do find any other place but that one which was pointed out. There is one that is indefinite but I think it probably has deep water. There seems to be a continuous depth of water practically all the way.

Q. You haven't any doubt that the water would flow in that main channel there if the water should rise up to its former height, have you—if the land should rise up to its former height?

A. I would expect, other things being equal, that that deep in the bottom of the bay there, which has been described as channel, would become the course of the St. Louis River.

Q. Then have you any reason to doubt that it was the course of the St. Louis River before the land sunk?

A. Certainly I have.

Q. What reason have you to doubt it?

A. Because if that was the origin of the river it would not fit the currents of the bay and the currents of the bay, and the mud coming down St. Louis River would long ago have filled it.

Q. Is that your explanation of that?

A. Yes, sir.

Q. Was there a St. Louis River there before this land sunk?

A. Not the St. Louis River, no, sir; a river of different size and capacity and different conditions.

Q. Wasn't it the same river?

A. No, sir. It had a source in a different direction. The St. Louis River in its source was diverted by glacial action across the divide so that the river's volume and capacity now is not the

1455 same as the river which made the valley in interglacial times.

Mr. Bailey: If you will permit me to ask one question, I think it will draw out something.

Mr. Gard: Go ahead.

Mr. Bailey:

Q. Is it your idea that prior to the glacial period these waters that now flow down this way flowed off towards the Mississippi?

A. Yes, sir, a large part of it.

Mr. Gard:

Q. When did they begin to flow into Lake Superior through the St. Louis?

A. The flow began from the upper St. Louis down past Brookston at the time when the glacier coming from the direction of Manitoba had reached down as far as Floodwood, and across the line of Farm Island Lake, so as to prevent the water from going into the Mississippi.

Q. How long ago was that?

A. A hundred thousand, two hundred thousand years ago.

Q. Then how long has the St. Louis River been running in its present course?

A. In different parts of the course, different lengths of time. The river came as a glacial river as far as Scanlon and went then past Moose Lake to Kettle River Lake, it came as far as Carlton and went by Moose Lake. Then it came to Lake Duluth at a thousand and eighty feet above sea level, which is near Thompson or Carlton. It came in there to a glacial lake and finally in to the Nippising glacial lake which, as I would understand, flooded back up
1456 this bay and established the mouth of the river near or above where it now is.

Q. How long has the St. Louis River been flowing into Lake Superior substantially in its present form?

A. Oh, some 20,000 years, 40,000, 50,000, many thousand years.

Q. It has been flowing in its present form, then, that is, into Lake Superior, substantially 20,000 years you say?

A. Yes, sir.

Q. Now when was it you said this sinking began to take effect, sink of the land?

A. Oh, that sinking has been going on, of course, indefinitely, but it took effect, so far as Minnesota Point and the bay upon the Point is concerned, at the time when the building of the beach was begun and during the time the beach was building and from that time until now.

Q. I am asking you in years now what in your judgment—How many years ago did this sinking begin?

A. You see that differential uplift began at the time of the retreat of the ice and has been a continuous movement since the retreat of the ice.

Q. How long ago was that?

A. A hundred thousand years ago.

Q. How long did it take the earth here to sink 8 feet?

A. I think that is asking too much of a geologist, to measure geological times by years.

Q. Don't you attempt to measure by years?

A. Only for the amusement of the public.

Q. Only for the amusement of the public?

A. That is all I ever do.

Q. That is all you did when you were measuring Minnehaha Falls, and you stated that Niagara Falls had been measured,
1457 you were doing that just for the amusement of the public.

Q. I was writing a folio for the United States Geological Survey and had orders to do it.

Q. And that was just for the amusement of the public?

A. As far as I was concerned, yes, sir.

Q. Do you find a channel through Superior Bay on the Meade map?

A. Yes. There are two channels there which nearly meet or practically meet, one coming out from between Rice's Point and Connor's Point and going in the direction of the passage from the bay out into Lake Superior; the other one comes from that passage into Lake Superior and the two meet and connect quite distinctly a little more than halfway between the two points measuring from east to west.

Q. You have reference to the light indication on the Meade map which runs almost directly from the gate between Rice's and Connor's point to the natural entry, with a middle ground where it divides?

A. Yes, sir.

Q. There is a channel there?

A. Yes, sir.

Q. How do you account for that channel?

A. When water flows out through this outlet it collects along the central line, which would tend to make the current in the direction towards the outlet greater along that line than to either side, and preventing sediment from settling in that place, and maintain a deep, while other parts might be slowing up, likewise when water comes in through this that becomes a distributary for the water. Now between Rice's Point and Connor's Point there is a gathering of the water into such a line, and the flow is di-
1458 rected by the relation of the current in that one to the current in the one over here at the outlet. That causes them to unite approximately, and in that way the currents in the bay I say tend to maintain a definite depression, which you call a channel, along from one point to the other.

Q. Don't you call it a channel?

A. Yes, sir.

Q. Then why did you say, which I call a channel?

A. Because I wanted to get you to understand what I was describing.

Q. Now then, that is your explanation of that channel, is it?

A. That is part of the explanation of that channel.

Q. If you have any other let's hear it.

A. There was already a number of deeps in this district throughout the bay at the time when this point was formed, and the direction of the movement of water in the bay has tended to keep open and probably to enlarge those channels, or those deeps, which serve as channels for the movement of water in the bay, and keep the sediment from settling in there. The other part of the bay I think has been filled to some extent.

Q. Now have you finished your explanation?

A. I think I have.

Q. Now you don't think that the current, the coming down of the water through the St. Louis River had anything to do with

forming that channel there, that is the current from the water coming down St. Louis River?

A. Not as a river, no, sir.

Q. I am not asking you whether it is as a river or not. I am asking you whether you claim that the current or the water coming down the St. Louis River—it don't make any difference whether you say it comes down as a river or not, I want to know whether
1459 or not the water which comes down the St. Louis River had anything to do with forming that channel?

A. I am trying to understand your question, and if you mean that there is a definite stream of water issuing from St. Louis River which traverses the full length of this bay and thereby, as a stream obtaining its momentum from the river cuts that channel, I should say No.

Q. You do know, don't you, that there is water coming down the St. Louis River all the time?

A. Yes, sir.

Q. And a large volume of it, isn't there?

A. Sometimes quite large.

Q. Now, then, do you figure that that water that comes down the St. Louis River has anything to do with cutting that channel or not. Now I think you can answer that by Yes or No, can't you?

A. I cannot, because the question is ambiguous.

Q. You said that you know there is quite a volume of water comes down St. Louis River?

A. Yes, sir.

Q. Can't you answer whether or not you consider that that volume of water which comes down the St. Louis River has anything to do with cutting that channel?

A. After the water gets in to the bay it is then the agent which proceeds to cut this channel.

Q. Now you won't answer that by Yes or No, will you?

A. I will if you make it plain to me. I wouldn't speak of a volume of water cutting a channel. I would have to have a flow to cut the channel.

Q. Don't that water flow down the St. Louis River?

A. Yes, sir. Then I would want it defined as a stream, definition as to whether it flows as a stream and other under-
1460 standings before I could answer the question.

Q. You won't answer that question by Yes or No?

A. I should answer No, because I don't understand the question.

Q. You have given a different explanation for this channel, haven't you, than you gave for the one which you found above Grassy Point?

A. The channel above Grassy Point, no, sir.

Q. Same thing is true of that channel?

A. Essentially.

Q. You said that was a deep, didn't you, that was formed before the river ran there?

A. It originated as a deep. It now acts as a channel for the movement of water,

Q. I say, it acts as a channel for the movement of water?
A. In the filling of the bay or silting up, deposition of materials, has had some regard to the movement of water, tending, I have no doubt, to make that channel much more definite than it was originally.
Q. If a river adopts a deep for its channel is it any the less a river than if it had cut the channel itself?
A. A river flowing under a bay isn't a river.
Q. Read the question, Mr. Reporter. (Question read.)
A. If a river adopts a channel is it any less a river than if it cut that channel itself?
A. Yes.
Q. You consider that it is?
A. Yes.

Mr. Fryberger: I want to object to the question on the ground that that question is absolutely meaningless. Nobody can understand it, either a lawyer or geologist or anybody else.
1461 Attorney-General Owen: I think some lawyers understand it.
Mr. Fryberger: Wisconsin lawyers may.
Mr. Gard: They do.
The Commissioner: If the witness doesn't understand the question, say so, and if he can answer it——
Mr. Gard: That is all I want. If he don't understand it I want to see what his intelligence is.
The Commissioner: I don't understand it.

The Witness: Might I make a little explanation?
Mr. Fryberger: Certainly.
The Witness: If you asked me if I adopted a suit of clothes, would that be any the less a suit of clothes than if I had it made for myself, I would say, Yes, it don't fit me.

Q. Then you do understand the question?
A. I understand the question, but it is absurd.
Q. You understood it all the time?
A. Yes, but it is absurd.
Q. Is it because this channel doesn't fit the St. Louis River; is that the reason you don't regard it as a channel of the St. Louis River?
A. That channel above Grassy Point?
Q. The channel above Grassy Point.
A. It is because the river as the St. Louis River doesn't flow in that channel. It is only the water of the bay that flows in that channel.
Q. You said you never had tested the current there, didn't you?
A. Yes.

Redirect examination.

By Mr. Bailey:

Q. Professor Sardeson, I will ask you if substantially this
1462 would be a fair definition of the mouth of a river put in layman's words: where the banks definitely and prominently widen out. Would that be a fair layman's definition?

A. I think it would.

Q. And would that definition fit what you have given as the mouth of the river here?

A. In a loose way it would.

Q. Is it, from a geological standpoint, at all proper to speak of this channel, we will call it, through the bay, as a drowned river?

A. I think it is not, unless they have conclusive proof that there was a river there that was drowned.

Q. But in your opinion there never was?

A. In my opinion there never was.

Q. Talking with you on the street-car last night you told me something with reference to the tendency of silt or mud or anything that was carried in water to lodge in grass. State in substance what you said there. To fill up because of grass.

A. There is a lot of fine mud coming down from the river and that tends to settle where the water is still rather than where the water is moving. A slight movement will keep a great amount of this material from lodging. Grass growing in the water, either in deep water or shallow water, keeps currents from moving so that sediment, as mud, clay, has a better chance, mud has a better chance to settle at those places than where there is no grass.

Q. Is there anything in the shore line or banks or the beaches up there that you have in mind which indicates that the river ends up about Big Island and that the water from there on down is an arm of the lake?

A. Yes. The river from Fond du Lac down to Big Is-
1463 land appears to be held within banks of its own making. From beyond Big Island there are no definite banks that I could point out that have been made or control the flow of the river.

Q. Just give a little more fully what you meant yesterday about a large body of water overflowing into a small body and controlling it rather than a small body overflowing into a large one. Just bring out, if you will, what there is to that proposition. Possibly you covered it pretty well yesterday.

A. You mean as to its effect?

Q. Yes.

A. The effect is a more rapid current in, with a greater erosive power, than there would be out. From the lager body there would be a stronger current than from the smaller body. That is apparently seen here on the map from the channel on the end of Wisconsin Point running westward, which is longer than the one which comes the other way.

Q. That is the one which comes from——

A. Comes from Rice's Point to meet this other one. Also at

Rice's Point the bay here (indicating) sends a channel further over this way (indicating), than this narrow body of water flows up in that way. The erosion is in both directions.

Q. It is greater going from the larger body towards the small one than from the smaller toward the larger?

A. Appears to be, yes, sir, that is the water deeper.

Q. Is it true that in lakes channels are very often found?

A. Oh, yes.

Q. Is the bottom of a lake just like the contour of the
1464 land except that it is covered with water?

A. Yes.

Q. Do you find hills and valleys?

A. Yes, sir, especially in our glacial lakes which we have here.

Q. Is Lake Superior a glacial lake, what you call a glacial lake?

A. Yes, it is. What we mean by the glacial lake, however, is strictly a lake whose contour is determined by clay and materials thrown down by the glacier.

Mr. Fryberger: There is one matter that I want to ask the Professor about that I want to consult him about first.

(Witness excused).

1465 F. A. BREWER, was called as a witness on behalf of the State of Minnesota, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Brewer, since you were on the stand before a Captain Shea has been on the stand and has testified, and amongst other things said, that he was, as I recollect it, working for you; at any rate, working with reference to picking up these logs along the late '80's. Do you remember just about the year that this 90,000,000 feet of logs broke away and came down?

A. I will say that was somewhere from '85 to '87.

Q. Do you remember the Tug Rambler?

A. Yes, sir.

Q. That operated on the bay and which Captain Shea was on for a time?

A. Yes, sir.

Q. How much water did that draw, or what was its draft, about?

A. Well, as I recollect, when she was with fuel on she drew close to 9 feet, around 9 feet, and light, a little better than 8.

Q. Do you remember a time when Captain Shea was with you and there was an attempt to go around what the Wisconsin people have called the main channel just westerly of Grassy Point, up through here?

A. Yes, sir.

Q. State what the circumstances were, what happened?

A. The Rambler was asked to go after some logs for us above that point and I was asked to go with them and help locate the

channel up there, and we undertook to go up what is known
1466 as the deeper channel on the inside there and I remember the Captain of the Rambler, Mr. Shea at that time was a wheelsman, and in along what is known as Kimball's Point, I think, of that bay, we got aground and we spent the larger part of an afternoon trying to locate, after we got off of the bottom, trying to locate a hole through there to get back into the channel that was commonly in use, and we couldn't make it. We had to give it up, and the Rambler returned without bringing any rafts or logs, and in fact she never did tow any logs from above this point, for us.

Q. Is this point that you refer to about the point of that bar across that channel there?

A. Yes, sir. I remember at the time they were there the Captain had the Government chart, what is known as Government chart, and we were following the channel, and we had to get out and sound it, and after we were aground we sounded around there and we weren't able to find any channel that that Rambler could go out into the channel that was commonly in use. The channel that was commonly in use was—tugs drawing around 7 feet could use that, and that was the one in towing the logs there. We towed for many years there and that was the one that was in use, the straight channel.

Q. And did the Rambler ever go up beyond that point?

A. Not to my knowledge. I know at this time we had a strong northeaster on and we thought we could make it with the Rambler with these logs, and she wasn't able to make it.

Q. Do you remember Captain Shea doing work with your tugs up there and picking up logs?

A. Yes, sir.

1467 Q. What work did he do and with what boats?

A. He worked with a smaller tug and he towed logs there different years for us with a smaller tug. It was after this. At that time I am quite certain when Shea was on the Rambler he had pilot's papers and not captain's papers. He afterwards, I think it was the next year, I think the second year after that he had a smaller tug and he worked for us for three or four years at different times.

Q. This small tug had a draft of what?

A. Around 6 feet.

Q. And was it with that tug that he did the principal work of picking up logs?

A. Yes, sir.

Q. And were these logs being picked up for several years after they broke and came down?

A. The logs from Cloquet, they were about a year and a half picking those up. Captain Shea towed other rafts for us. We had a certain mark on those logs that came down from Cloquet in that break, coming from the Cloquet Lumber Company.

Q. Were you often on tugs while Captain Shea was working for you?

A. Yes, sir.

Q. Now what course was usually taken when you were on the tugs

with Captain Shea? Calling your attention, now, to Minnesota' Exhibit 1, that is, did you take the course marked A-E-G-B-C o did you go around in the course marked H here (indicating)?

A. This is the course we used (indicating).

Q. When you were on the boat——

A. Or so close to it——

Q. Of course that is only supposed to be approximate. Did Cap tain Shea ever, to your knowledge, take this course H in doing work for you, that is, around here (indicating)?

1468 A. I think that the only time Captain Shea ever used that while he was in our employ was when we had some logs we took out of this bay.

Q. You are talking of a bay up a little east of Millford?

A. Yes, sir.

Q. Then you say the only time that he used that course was when you had logs in that point or near it?

A. Yes, sir.

Q. You say that you have, even when there were logs up in here east of Millford, you have taken this——

A. I should think it was just west—Where is that island? I can't see it. Where is the shore line of the Millford Bay? That's it right in there (indicating). We was taking logs out of there for ourselves, with Captain Shea. We have gone across this way and across this way (indicating) with a smaller tug than the Rambler.

Q. With your small tugs you have taken logs with Captain Shea from out and around Millford both direct to the point C in the channel marked C-B-G-A, and have also brought them out through the channel marked H?

A. Yes, sir, with a smaller tug.

Q. But never with a tug drawing as much as the Rambler?

A. No, sir.

Cross-examination.

By Mr. Gard:

Q. Were you always up the river with Captain Shea when he went up?

A. No, sir.

Q. How frequently were you with him?

A. There was a period of four or five years while he was doing work for us that I was with him, usually, when he went for us, but not when he was for other parties.

1469 Q. What would you go along for usually?

A. Look after making up the logs, see they were properly made up.

Q. You didn't hold the wheel?

A. I have wheeled the tug a great many times up there.

Q. Did you hold the wheel for Captain Shea?

A. I have, yes, sir.

Q. How often?

A. A good many times. I stood watch for him while he was sleeping.

Q. Now it is your explanation that the larger boats avoided this channel marked H there; is that right?

A. There was no larger draft boats went up there to my knowledge.

Q. You said the Rambler was too deep a draft boat to run in that channel H?

A. Coming up to a certain point; run up to the upper end of it, and there was a shallow spot at the upper end that was no deeper than this channel here (indicating).

Q. It was as deep, wasn't it?

A. It was as deep. It was deeper the larger part of the distance but the upper end was no deeper than this.

Q. It was as deep at the upper end as that?

A. Yes.

Q. It was as deep at the shallowest place as the channel that you indicate, C-B?

A. Yes, sir.

Q. That's true, isn't it?

A. Yes, sir.

Q. But no deeper, you say?

A. At the upper end it was no deeper.

Q. But it was as deep at the shallowest place?

A. That is the way we find the soundings.

1470 Q. And the rest of the way it was very much deeper, wasn't it?

A. Well, I understood it was, from the charts. We only sounded the upper end of it.

Q. Do you remember what the soundings showed?

A. At that upper point?

Q. Yes.

A. Between six and seven feet.

Q. That is when you got stuck you were in six or seven feet of water?

A. Yes, sir, with the Rambler when we got stuck we were in about five or six feet where we were aground at the time.

Q. Now, Mr. Brewer, would you undertake to locate the exact spot where you were stuck at that time?

A. I couldn't do it, no, sir.

Q. That was a good many years ago, wasn't it?

A. Yes, sir.

Q. For ought you know, Captain Shea may have gotten out of the channel, may he not?

A. At the time we couldn't find any channel at the upper end of it.

Q. For ought you know, he may have gotten out of the channel when you got stuck?

A. Yes.

Q. Captain Shea, then, went up there for you when you were not along, didn't he?

A. At the time I was speaking of, Captain Shea was not in charge of the tug; he was wheelsman on it.

Q. He then went up there as wheelsman when you weren't along?

A. He was *knew* to the channel at that time. Also the captain of the Rambler. It was their first trip up there; the first and only trip that the captain would ever make up there, that owned the tug, as long as I knew him, for three or four years.

Q. Was that Captain Shea's first trip?

A. First trip; never been up the river with the Rambler.

1471 Q. Do you know whether he had been up there with other boats or not?

A. I do not.

Q. You know of his being up after that, didn't you?

A. I knew of him going afterwards, not with the Rambler.

Q. That is the only trip that he made up there with the Rambler?

A. As far as I know.

Q. Who owned the Rambler?

A. I can't recall his name. I knew him very well. It's too long——

Q. Was the Rambler working for you all the time?

A. No, sir. She was towing logs from the lake. She was a lake boat.

Q. Now, Mr. Brewer, you don't know, then, whether Captain Shea went up there on the Rambler at other times?

A. I know that the captain of the Rambler wouldn't go up there, wouldn't try it.

Q. Did you keep track of him all the time? How long after that did you keep track of him?

A. I know that Captain Shea, either the first or second year after that, say the next year, was on a smaller boat and doing the work up there for us and others.

Q. About how much time did he work for you?

A. There was times that he would work by the month; there was times three or four days.

Q. Was he then captain of the boat?

A. Yes, sir, of another boat.

Q. Were you with him when he went up for you, always?

A. Not always.

Q. You weren't generally with him, were you?

A. I was generally with him when he was towing logs for us.

Q. About what proportion of the time do you think he

1472 towed logs for you?

A. I know that at the beginning of his towing up in that country he was towing for us, and some logs from what is known as the Duluth Boom Company, and the senior member of our firm, Mr. Duncan, was president of the Duluth Boom Company, and he was often sent up there to look after them, and Shea, was towing part of the time for the Boom Company, for other mills, and at times he towed for us while there was some other tugs doing work there, too, for some three or four years.

Q. About how much of the time did he work for you, what

proportion of the time did he work for you as distinguished from other people?

A. Possibly ten per cent.

Q. Did that include the Boom Company too?

A. No, didn't include the Boom Company.

Q. What portion of the time that he went up for you did you go with him?

A. Probably two-thirds of the time.

Q. How much water did you say the Rambler drew?

A. Around nine feet when she was loaded; that is my recollection of it.

Q. You saw, didn't you, that that channel that you indicate there, C to B, shows about 8 feet of water, doesn't it?

A. Rambler never used that channel, to my knowledge.

Q. Never used that channel?

A. Never used the channel C to B.

Q. Never used that?

A. Not to my knowledge.

Q. Never used that channel at all?

A. No, sir.

Q. What other boats did you go up there on with Captain Shea?

A. I can't recall the name of it. Seems to me it was the Hope. There was different tugs. There was so many of them I can't
1473 recall the name of the tug. I know it was a small boat. There was just a captain and an engineer on it.

Q. Who was captain?

A. Shea was captain of the smaller tug.

Q. You don't remember the name of it?

A. I would remember it if I heard it. I can't recall it just now. It came to my mind the other day but I can't think of it this morning.

Q. How often did you go up with him on that boat?

A. That is the only boat I ever did go up with him on, except on that boat that he got stuck, with Captain Shea. I was often up with other captains on other boats.

Q. About how often did you go up with him on that boat?

A. There was two springs that I made frequent trips with him, but I can't tell how often.

Q. Now about how often would you say?

A. Oh, I would probably make 20 or 25 trips with him.

Q. How far up?

A. Clear to Fond du Lac.

Q. What were you doing?

A. Towing logs.

Q. All of them from Fond du Lac?

A. No, sir. Different points along the bay. Some from where the boom, where the Duluth Boom Company was, as well as from the slough right below Fond du Lac and different points along down the river.

Q. How much water did that boat draw?

A. The smaller boat that Shea was on?
Q. Yes.
A. It was around six feet, not over that; under it, if anything.
Q. Could go most anywhere on the water up there, couldn't it?
1474 A. No, sir. Lots of places go around.

Redirect examination.

By Mr. Bailey:

Q. You say that Captain Shea was up there quite often for the Boom Company as well as for your company?
A. Yes, sir.
Q. Did the Boom Company have a very considerable number of logs to get down?
A. Why, there was possibly three years that they had quite a fair amount of logs up there.
Q. I mean during those years?
A. There was three years that there was, say around 18 to 25 million, but there were other years that they got down about 6 or 7 million.
Q. You say this 10 per cent of the time that he was towing for you, that didn't include what he was towing for the Boom Company?
A. No, sir.
Q. Was he doing work a considerable portion of his time for the Boom Company?
A. There was different boats towing for the Boom Company. The Boom Company didn't deliver the logs. The logs were rafted and the owners took the logs from there and they were going to different mills, and they used to hire tugs, the same as we were hiring.
Q. Would he work for the Boom Company considerable time outside of this 10 per cent?
A. I think that he did quite a little work for them.
Q. At the time you were stuck up there you sounded all around the bay there to get out?
A. Yes, sir. We was there some two or three hours trying to get some place we could get through.
1475 Q. But you tried all over there and couldn't find any place?
A. No.

F. W. SARDESON, was recalled as witness on behalf of the State of Minnesota, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Professor Sardeson, did you ever hear of a man by the name of Lawrence Martin, Associate Professor of Physiography and Geography, University of Wisconsin?

A. Yes, sir.

Q. I am going to read a paragraph or two from page 157 of a volume supposed to have been written by Lawrence Martin, Associate Professor of Physiography and Georgraphy, University of Wisconsin. Title Page: "Madison, Wisconsin. Published by the state. 1916." And will ask you to follow me in the matter. The book is entitled on the back, "Wisconsin Survey. Bulletin number 36. Physical Geography of Wisconsin. Martin." I wish you would follow me in what I read and then I will ask you a question. Commencing on Page 15: "State boundary in Lake Pepin. An interesting matter of political geography has to do with the boundary between Wisconsin and Minnesota in Lake Pepin. The law provides that the boundary shall follow the main channel of the Mississippi River along the western border of this state (P. 441). In Lake Pepin there is no accepted channel. The steam-boats may go almost anywhere except at the inlet and outlet. There has been difficulty in
1476 administering the fish and game laws because until recently the open season differed in the two states. Accordingly, there has been controversy, the State of Minnesota claiming the boundary should be in the middle of the lake halfway between the shores, while the State of Wisconsin contended that it should follow the usual route traversed by steamboats. This route happens to be much nearer the Minnesota shore, because the larger boats call only at Lake City on the Minnesota side. Accordingly, Wisconsin claims nearly three-fourths of Lake Pepin while Minnesota contends that we are entitled to only half.

"From the point of view of geography there is certainly no main channel. Moreover, the line of deepest water—if it were held that that constituted a main channel—does not coincide with the route usually followed by steam-boats. Figure 52 shows that the line of deepest water is" * * * "on a broad, flat portion of the lake bottom, much of it occupying half or a third the width of the lake. Where it is shallow it is even closer to the Minnesota shore than the steamboat route. The whole controversy really turns on the question as to whether the body of water at Lake Pepin is river or lake. Geographers can have no hesitancy in calling it lake, just as is the case in Lakes Ontario, Erie, or Huron, which are broad streches of water in the St. Lawrence River system." I want to ask you whether or not you agree with Martin on his definition of Lake Pepin as being unquestionably a lake?

A. I agree with him entirely.

Q. I think his testimony showed directly to the contrary, if I recall correctly; but that wouldn't affect you in any way in
1477 your opinion?

A. No.

Attorney-General Owen: No. He didn't testify in that way. He has always insisted that Lake Pepin was a lake.

Mr. Fryberger: His testimony will show.

L. P. GALLAGHER, was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Mr. Gallagher, where do you live?
A. 3019 Minnesota Point.
Q. In the City of Duluth?
A. Yes, sir.
Q. How long have you lived there?
A. About eight years.
Q. How long have you lived in Duluth?
A. Thirty-two years.
Q. What is your business?
A. Photograph business, commercial photographer.
Q. I show you Wisconsin's Exhibit 57 and ask you what that is?
A. That is a photograph taken from near the Zenith Furnace Company's dock, looking east, showing the pier or dock that extends out into the harbor, coal dock.
Q. The Carnegie dock, you mean?
A. Yes, the Carnegie dock.
Q. Above Grassy Point?
A. Above Grassy Point.
Q. Is that a photograph correctly showing the dock at that point?
A. It is.
Q. What is that mark which is a Roman cross?
A. That indicates a marking on the concrete, being about
1478 halfway; we couldn't show it otherwise.
Q. That is the marking that shows on Wisconsin's Exhibit 58, between "Wis" and "Minn."?
A. Yes, sir.
Q. I will show you Exhibit 58 and ask you what that is?
A. That is a photograph which I took on the pier or dock of the Carnegie Coal Company showing two markings on the concrete.
Q. What is the character of those letters on the concrete?
A. There is a straight line drawn and the word "Minn." on one side and "Wis." on the other.
Q. Are those letters cut in the concrete?
A. Yes; cut in the concrete.
Q. About how large are the letters?
A. About a foot in diameter.
Q. A foot in length?
A. They are about a foot high.
Q. There is a line between there, cutting the concrete?
A. Yes, sir.
Q. And is "Wis." on the Wisconsin side of that line, that is, toward the Wisconsin shore of the line?
A. Toward the Wisconsin shore.

Q. And "Minn." is on the Minnesota side or Duluth side of the line?

A. Yes.

Q. And that is the pier of the Carnegie dock that extends out in the water?

A. Yes, sir.

Q. Is that on top of the pier?

A. Yes, sir.

Q. How did you take the photograph?

A. I stood on the concrete and took a picture looking down.

Q. Is that a correct photograph of the part that shows?

1479 A. It is.

Q. I will show you Wisconsin's Exhibit 59 and ask you what that is?

A. That is a photograph taken from the Zenith dock, the Zenith Furnace Company's dock, looking east.

Q. On the Carnegie dock?

A. On the Carnegie dock.

Q. And that is the Carnegie dock that shows there, the building, is it?

A. Yes, sir.

Q. When was that taken?

A. September 19. No, no. I have forgotten, without looking up.

Q. About how long ago.

A. About a month ago.

Q. Is that a correct representation of the docks there as shown?

A. It is.

Q. Now there is a white mark on this photograph also. Is that the same place that the—— By this photograph I mean Wisconsin's Exhibit 59—— is that the same mark that is shown on Wisconsin's Exhibit 57, that is, the white Roman cross?

A. Yes.

Q. In 58 you were standing on the Zenith dock, were you?

A. Yes, sir.

Mr. Gard: We offer Wisconsin's Exhibits 57, 58, and 59 in evidence.

Cross-examination.

By Mr. Fryberger:

Q. Calling your attention to Exhibit 58, as I understood it, you took your instrument and got up over this point that you photographed?

A. Yes, sir.

Q. And in so far as these marks, these letters "Wis." and "Minn." are concerned, they are greatly exaggerated on this with ref-

1480 erence to the balance of the picture, aren't they?

A. Yes, sir.

Mr. Fryberger: That is all. No objection.

Redirect examination.

By Mr. Gard:

Q. Because they were immediately in front of the camera?
A. Well, these letters are the perspective, the same as when you look down the railroad track, or anything.
Q. Because the portion nearest to you appears bigger than that that is furthest from you?
A. Just the same as it looks to your eye.

Re cross-examination.

By Mr. Fryberger:

Q. In working up the photograph, you left the lettering dark and the part surrounding the lettering light?
A. No. That is just the way——
Q. That is the way it happened to take?
A. That is the way it took exactly.
Q. But the letters on the dock aren't very noticeable at all if you hadn't your attention called to them; you wouldn't notice them at all if your attention wasn't called to them?
A. They are made in green and the concrete being white, of course, shows.

Redirect examination.

By Mr. Gard:

Q. About what portion of the dock is on the Wisconsin side and what portion on the Duluth side of that mark?

Mr. Fryberger: I object to that on the ground that it
1481 doesn't appear that this witness knows anything about that or paid any attention to it.

Q. About how far from the shore is this mark and these letters, if you remember?
A. I couldn't say.

The Commissioner: The exhibits are received in evidence.

1482 AFTERNOON SESSION—2 P. M., Sept. 19, '17.

MARTIN WHEELER was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Your name is Martin Wheeler?
A. Yes, sir.

Q. You are now living where?
A. The past year I have been living in Washington, D. C.
Q. What is your age?
A. Sixty-eight.
Q. Did you formerly live at the head of the lakes here in Duluth?
A. Yes, sir.
Q. When did you come here?
A. In the fall of 1855.
Q. How old were you then?
A. Six years.
Q. Did you for a considerable number of years navigate the waters above Minnesota Point and Wisconsin Point?
A. Yes, sir.
Q. When did you commence navigating those waters?
A. In 1868.
Q. And for how long thereafter did you continuously navigate them?
A. Till 1881, 12 or 13 years.
Q. For 13 years you were continuously on those waters?
A. Yes, sir.
Q. What were you doing, master or wheelsman or what?
A. First I was engineer and then after that I was master.
Q. What boats or tugs did you operate principally?
A. The first one I was in was the Agate and the next was the Amethyst.
Q. What others did you run?
A. Just those two during that time. I owned the Ame-
1483 thyst or owned an interest.
Q. Both of those were tugs?
A. Yes, sir.
Q. And what business were the tugs engaged in principally?
A. Principally towing scows and booms of logs. Of course, there was towing along with it. Once in a while a barge or vessel, but it was principally logs and scows.
Q. And was a very considerable part of your time during these 13 years engaged in operating between Duluth and up to, say Fond du Lac?
A. Yes, a large part of it.
Q. You did a good share of the log towing, I take it, up there?
A. Yes, sir.
Q. And you mentioned scows too. Were you hauling scows that had rock on them, stone?
A. Yes, sir.
Q. Any other materials?
A. Wood, hay, lumber sometimes, brown stone.
Q. Where was that hauled from to, what point?
A. The first few years from Fond du Lac to the Superior entry for the Government piers.
Q. You say from Fond du Lac?
A. Yes, sir.
Q. There were stone quarries in Fond du Lac in those days?

A. In the early days.

Q. Were you engaged with others who were navigating those waters, in a commercial way, during that time?

A. Yes, sir.

Q. Was Alfred Merritt largely engaged in navigating those waters?

A. He was master and I was engineer on the first tug at the Head of the Lake here in '68.

1484 Q. And was Jack Jeffry, Captain Jack Jeffry, navigating those waters during a considerable part of that time?

A. He started in '69. I went as master of the Amethyst and he was with me that season, and the next season; he was with me for several years as engineer and then went as master on the Nellie Cotton.

Q. Do you know whether he was there navigating down to 1881 and possibly after that time?

A. Yes, sir.

Q. You knew Benn Howard and John Howard, did you?

A. Yes, sir.

Q. Now outside of those four that I have named, and yourself, that is Alfred Merritt and Jack Jeffry and the two Howards, was there anybody who navigated those waters in those days in a commercial way to any considerable extent?

A. There was one or two more, but I don't think they are living. Captain Lutz used to run up there a good deal. He was in the Agate after we got it.

Q. Were there any others that are living that you know than those four and yourself?

A. I don't think of any that made a business of running up the river.

Q. You just came on from Washington, D. C., did you not?

A. Yes, sir.

Q. Did you visit Captain Jeffry at the hospital yesterday?

A. Yes, I saw him yesterday.

Q. He has been quite ill, has he not?

A. Yes, sir.

Q. Now, during those years from '60 to 1881 were there any boats that navigated these waters, we will say above Grassy Point, that drew more than seven to eight feet of water?

A. Not that I know of.

Q. What was the deepest draft that you knew of in those
1485 days going up above Grassy Point?

A. I didn't understand the question.

Q. I say, what was the deepest draft of any boat that you know of in those days that went up above Grassy Point?

A. Eight feet.

Q. Eight feet was the deepest?

A. Yes, sir.

Q. And, as a matter of fact, down in what is known as the lower bay was that as great a draft as could get through there?

A. Eight feet was what we considered all a person could get through St. Louis Bay.

Q. Now calling your attention to Minnesota's Exhibit 1 just before you here, what was the course usually taken in going after you passed Grassy Point up to Fond du Lac?

Mr. Gard: Objected to as not proper rebuttal.

A. As it appears on this map or as I would state it in my own—You mean using this chart?

Q. Yes. Indicate some way by the chart so that we can make a record, if you can—Meade chart.

A. This is what we used to call the Government chart of the head of the lake, come out in '62 or '3?

Q. Yes.

A. Yes, I am familiar with it. All you care for is below Grassy Point?

Q. Yes, at present that's what the question refers to; from Grassy Point on is what I mean?

A. Well, here is the river coming down here and here is Grassy Point. We used to come up through the bay, then follow this water here (indicating). This is a channel that wa-n't used very much (indicating).

Q. You are pointing now to the line marked A-E and
1486 crossing to the west around to F, aren't you, that you say wasn't used very much?

A. Very seldom. There was a channel up there. The course we usually took when we were going up the river to Fond du Lac we would come up here opposite this corner of the point; used to be a big clay bank in here, and then we used to have a little island here. This is it here, I think.

Q. That is called Snowshoe or Snowpack or Pancake Island?

A. I don't know what it is called. I never heard any name for it. We followed about the course marked here (indicating) to this line up here.

Q. You pointed now from A to G to B?

A. Yes.

Q. What course did you take from B on?

A. In going up to Fond du Lac we used to generally take this here what is called the cut-off.

Q. That is the line B-D and then on?

A. Yes. Going into this channel and through here.

Q. And south or east of Big Island?

A. It is the way we generally went in doing our towing to Fond du Lac, and if we had anything over in here we used to take this other channel over here (indicating).

Q. What channel do you mean?

A. It would be this one to the right of this island. The dividing point would be about here. Is that B?

Q. Yes.

A. That's about where, if they were going to the north of the island, we would go around this way.

Q. That is, if you were going to the north of the island you would go along the line B-C or substantially that?

1487 A. Yes, about that. If we were going to Fond du Lac generally took what you call the cut-off channel.

Q. And you say that the most of the traffic was through the cut-off?

A. Yes, sir.

Q. In those days. Now when, if ever, did you go along the channel or white line in the center of which is the letter H—was that used?

A. If we had any towing to do that would originate in this bay, or if we wanted to go into Millford, we generally took this channel. Millford was located in there (indicating).

Q. You say this bay——

A. Used to be logs in there sometimes.

Q. In order to get it on to the record, what bay do you refer to? Can you give it any name?

A. No name for it.

Q. Was it then the bay that you are pointing to, just a little west of the point marked H on the map?

A. Here was the point (indicating). It was about that shape. Grassy Point is only that wide (indicating).

Q. Does that fairly describe it, a bay a little west on the map, of the point marked H?

A. That would be all right. Well, it would be more——

Q. I assume this is north and south?

A. Yes; that's about right; that would be about west.

Q. You say you took that channel or that line when you were going in to either that bay or to Millford?

A. Yes, sir.

Q. But otherwise if you were going up the river up to Fond du Lac you would take the line A-G-B-C, that is, if you were going north of the Big Island?

A. Yes.

1488 Q. And that line A-G-B-C, was that the line usually taken by traffic in those early days?

A. Going on this side of the island?

Q. Yes, going on the north side of the island?

A. Yes.

Q. And that was the line usually taken except when people were going through the cut-off; is that right?

A. Yes, sir.

Q. And does what you say as to the line of traffic apply as well to the traffic conducted by others, as yourself?

A. As far as I know.

Q. That was the customary course of travel?

A. That was the custom of the tugs that were running at that time.

Q. Can you give us some idea as to how many times as much commercial traffic went along the line A-G to B, we will say, as would go up the line or channel marked H, in those days?

A. I should say at least nine-tenths of it went this way.

Q. Nine-tenths of it went along the line A-G-B?

A. Yes, sir.

Q. And what went up the channel, so-called, marked H, was just what went up to the bay or went up to Millford?

A. Very little went that way.

Q. Now do you remember a man, I think he is a half breed, I think the evidence shows, called John Ojibway?

A. We used to call him John Chippeway.

Q. Did he work for you at any time, work on the scow that you were hauling?

A. Worked on scows; I don't think he was directly in my employ.

Q. Did you haul scows that he was working on?

A. Yes, sir.

Q. Hauling stone?

1489 A. Yes, sir. Wood too, I think; I wouldn't be positive.

Q. First I will ask you this: Would the same course be followed coming down the stream as going up?

A. Yes, sir.

Q. And during that time, in hauling scows in which he was working did you take this course that you have indicated?

A. Yes, sir.

Q. Didn't go around in this channel, so-called, marked H, except when you were going up to Millford or——

A. No. I don't ever remember taking stone around that way.

Q. Now, was the water as deep, that is the continuous depth of water as great, in this channel marked A-G-B-C, as it was in this half moon circle marked H; I say the continuous depth?

A. Just ask that again.

Q. I say, was the continuous depth as great in the line marked A-G-B-C, which you usually took, as it was in the half moon line marked H?

A. I couldn't say as to that. According to the chart, it is deeper this way. I never sounded the channel as long as I had plenty of water going this way.

Q. So far as you knew, was it as deep in this line A-G-B-C as it was around the other way?

A. As I said before, I never sounded the channel, so I couldn't say. All I could go by is what I see here on the chart.

Q. Did you ever have any trouble in going up the line A-G-B-C with this craft that you were using in those days?

A. No, there was plenty of water for us.

Q. You think, then, if Mr. Chippeway or Ojibway said that you towed him down in these scows with rock along this half moon

1490 line H, he is mistaken, do you?

A. Yes, sir.

Q. You don't remember of ever going there?

A. Not that I know of.

Q. Now was the channel in the mark A, G, B, C, was that much wider than this one marked H, I mean wider expanse between the reeds?

A. Yes; yes, it was some wider.

Q. And of course saved distance too?

A. It was quite a little shorter from Grassy Point to Fond du Lac by taking what we called the cut-off, taking this channel here.

Q. Suppose you were going north——

A. That would shorten it some but not so much. It would make it a little shorter.

Q. And the shortest of all, of course, was going by the cut-off?

A. Yes, sir.

Cross-examination.

By Mr. Gard:

Q. You say you live in Washington, Mr. Wheeler?

A. Yes, sir, I have for the last year.

Q. Where did you live before that?

A. A year ago this time I was living here in this city.

Q. When did you come to Duluth now?

A. I have just been here a few days this time.

Q. What did you come for?

A. Oh, I come for different things.

Q. For what?

A. I said, for different things; come to make a visit and been intending to go West for some time; also expecting to be a witness in this case.

Q. What is that?

1491 A. I say, also expected to testify in this case.

Q. Was that the principal thing that brought you here?

A. No.

Q. You say you commenced navigating the waters here in 1868?

A. Yes, sir.

Q. On the tug Agate?

A. Yes, sir.

Q. What were you doing principally with the tug?

A. At that time?

Q. Yes.

A. I was engineer on the Agate in '68.

Q. How long did you run the Agate?

A. One season.

Q. What was it engaged in principally?

A. Towing stone from Fond du Lac to the Superior entry.

Q. Was it engaged in that all the time?

A. Pretty much all the time.

Q. What else did it do?

A. Oh, used to have, sometimes scow load of wood, sometimes scow load of lumber; once in a while tow a vessel, something of that kind; different kinds of work that would be in connection with a tug.

Q. From what place to what place?

A. Our work was principally between Fond du Lac and the Superior entry.

Q. Was it all between Fond du Lac and the Superior entry?

A. I am not positive. I am not sure whether we brought any

stone that year from the North Shore or not. I know we did the next year but I am not sure whether we brought any from the North Shore.

Q. You ran on the Agate one year?

A. Yes, sir.

Q. As engineer?

A. Summer.

1492 Q. Just one summer?

A. Yes.

Q. Then what boat did you go on?

A. Amethyst.

Q. What was the Amethyst doing?

A. General towing.

Q. That was in '69, was it?

A. Yes, sir.

Q. Doing general towing, you say?

A. Yes.

Q. Where?

A. On the upper end of the lake and the bays and up to Fond du Lac.

Q. What do you mean by upper end of the lake?

A. We will say within 30 or 40 or 50 miles of Duluth.

Q. Just doing the general towing business?

A. Yes, sir.

Q. And was that true all the times you ran the Amethyst, that it was doing a general towing business?

A. Yes, sir.

Q. Went wherever you had business to take you?

A. Yes, sir.

Q. Now, how long did you run the Amethyst?

A. I was on her till '81; that would be 12 seasons, 12 years.

Q. And doing a general towing business all that time?

A. Yes, sir.

Q. How much of your business was up the St. Louis River with the Amethyst?

A. The first three years the larger part of it was up the river, because we were working on contract work, filling the Government piers at Superior entry, and after those three years we were not so busy up there; we had to work about half of the time after that but we were running up there pretty near all the time the first three years, '69, '70 and '71.

Q. What took you up there after the Government work was finished?

A. Oh, we got stone up there occasionally, and then there

1493 was a great many rafts that came in from up there; a great deal of logs came up from above Grassy Point.

Q. Were you master of the Amethyst?

A. Yes, sir.

Q. Who was wheelsman?

A. My own?

Q. You held the wheel yourself?

A. Yes, sir.
Q. All the time?
A. No, not all the time.
Q. Who was wheelsman with you?
A. Didn't carry any wheelsman.
Q. Somebody held the wheel part of the time?
A. Sometimes the engineer would change off; sometimes the cook would.
Q. Who were your engineers?
A. For the first five or six years Captain Jeffry was my engineer.
Q. Who was the engineer after that?
A. I don't remember who did take his place.
Q. Where is this captain that you speak of?
A. In the hospital.
Q. Where?
A. Up here at Third and Fifth. I don't remember the name of the hospital.
Q. Do you remember anybody else who ran with you on the boat?
A. Yes. There was a fellow by the name of John Stevens.
Q. Where is he?
A. I don't know where he is.
Q. Anybody else?
A. Rozelle Coburn was with me.
Q. Where is he?
A. Dead.
Q. Anybody else with you?
A. Yes. There were some others, but I don't know as I can recall their names on the spur of the moment.
Q. Now, you say when you went up to Millford you went the main channel there that is marked H; is that right?
A. Yes. We went the channel marked H.
1494 Q. And when you went up in that vicinity for logs you took that same channel?
A. We took that channel if there was logs to be towed from near Millford.
Q. Was there a saw-mill at Millford?
A. There had been. There wasn't at that time. There was one there in an early day but it was dismantled at that time.
Q. Were you ever in at Millford very often?
A. I have been quite a number of times but not very often.
Q. About how many times?
A. Oh, perhaps three or four, four or five times in a season; never had much work there.
Q. Was there any freight originated between Millford and Spirit Lake on the north side of the island?
A. Depends on what you mean by "freight".
Q. Well, anything to tow?
A. There used to be booms of logs; used to be a good many logs put in along the shore.

Q. Did you go up there very often to tow anything down between Millford and Spirit Lake?
A. Yes. We had quite a number of tows from in there.
Q. How many?
A. I couldn't tell you how many.
Q. Well, about how many?
A. Be all guesswork; might have had 25, might have had 50.
Q. What for?
A. Logs principally.
Q. Whose logs were they?
A. I think we towed a good many for Mr. Howard, and then Peyton had some up there at that time.
Q. Between Millford and Spirit Lake?
A. Yes, sir.
Q. About how many logs would you say you towed down
1495 between Millford and Spirit Lake?
A. I couldn't tell you how many.
Q. Couldn't tell.
A. No, sir.
Q. When you went up to Fond du Lac you took the cut-off?
A. Yes, sir.
Q. Invariably?
A. No, not invariably, but usually.
Q. What decided you in going the other way or coming the other way?
A. Nothing unless we had some occasion to go around that way.
Q. Well, when you went up to Fond du Lac for anything, that is, if your destination was Fond du Lac, did you always go up the cut-off?
A. Almost always; not always, but almost always.
Q. Why didn't you always?
A. Because sometimes we had something that would take us around the other way.
Q. That is, you went for freight, you mean, the other way, or a tow of some kind?
A. Yes, sir; sometimes have booms to pick up, sometimes have scow to pick up, and different things.
Q. But unless you had something that called you northerly of the island you always went the cut-off?
A. Yes, usually went the cut-off.
Q. You say usually. Did you always take the cut-off unless you had something that originated between Millford and Spirit Lake?
A. I think so.
Q. Invariably?
A. As I said before, that is the way we went usually.
Q. Well, did you ever come down the other way when there was no freight or no tow to bring you down that way?
1496 A. I don't remember of it unless it was something particular that would bring me the other way.
Q. Why did you go the cut-off?

A. It saved time and was shorter.

Q. How much shorter?

A. I think it's three miles, three and a half, from Grassy Point. I don't remember exactly, but that is my recollection. It was somewhere about three miles, three miles and a half shorter.

Q. Did you ever have any trouble in getting around the Devil's Elbow?

A. No, sir.

Q. Where is the Devil's Elbow?

A. Right there at Grassy Point.

Q. You fix the Devil's Elbow at Grassy Point, do you?

A. Yes, that's what I call the Devil's Elbow.

Q. You knew of some of them calling the Devil's Elbow at the southerly or easterly of Big Island, didn't you?

A. Well, that's just a matter of opinion.

Q. You knew of that being called the Devil's Elbow?

A. Yes, sir.

Q. Had the mill been burned at Millford before you began operating on the river?

A. No, sir.

Q. Well, was it running?

A. It had been dismantled, I said.

Q. Before you began operating on the river?

A. Yes, sir, machinery taken out.

Q. So there was no mill at Millford when you were operating on the waters of the river.

—. ——.

Q. Do you know when it was dismantled?

1497 A. No, I do not know what year it was dismantled.

Q. Did you know Victor Desimval that ran the mill up there at Millford?

A. Yes, sir.

Q. Was he living up there when you were on the river?

A. I don't remember whether he was living there then or not. I know he was previously but I am not positive whether he was there then or not.

Q. He used to run the mill, didn't he?

A. I think he did.

Q. How much water did the Agate draw?

A. Six feet.

Q. How much water did the Amethyst draw?

A. Just about the same.

Q. You could go most anywhere on the waters up above Grassy Point there, couldn't you?

A. Oh, no.

Q. What?

A. Couldn't go most anywhere; too many 3, 4, and 5 foot flats to go most anywhere, got to keep pretty near in the right place.

Q. Now, there was a great deal of 7 foot water above Grassy Point there, between that and Big Island, wasn't there?

A. I don't think so.
Q. Not much, you think?
A. No, not what you call much in comparison to the space there is between Grassy Point and the main land.
Q. What were you doing in 1881?
A. I don't recollect whether that is the last year I had the Amethyst or not. I am not sure whether it was '80 or '81.
Q. What were you doing in 1888?
1498 A. I say, I am not sure which year it was. That was the last year I was on the Amethyst. I know I was on the Amethyst in '80 but I am not sure about '81.
Q. In the '70's there wasn't a great deal of towing business up the St. Louis River, was there?
A. Yes, sir, there was a good deal.
Q. What did it consist of?
A. Already told you; towing barges of stone, wood, hay, towing logs, piles, timber.
Q. Was there more than there was in the '60's?
A. Oh, yes.
Q. How about the '80's; was there much in the early '80's?
A. I couldn't say because I don't recollect that I was on the water much of any for two or three years, '82, '83, and '84.
Q. Wasn't on the water after '81, were you?
A. Yes, later on along '85, '86.
Q. What were you doing then?
A. '86 I was out on the lake.
Q. Was John Howard navigating the waters of the St. Louis River when you were on there?
A. I think he was in the '70's.
Q. What was he doing?
A. I think he was in connection with the boat that his father used to own.
Q. What did he do?
A. I couldn't say just what he did. I know he was on the boat, but what he did I couldn't say because I wasn't on the boat myself.
Q. You don't know what he did, then?
A. No.
Q. What boat was that?
A. Lottie Bernard.
Q. How long did you know of his being on there?
A. Two or three different seasons.
Q. When?
A. I can't tell you just what year, but it was in the '70's.
1499 Q. '70's?
A. That's my recollection.
Q. You don't know what he was doing on the boat, though?
A. No, sir.
Q. What was the Lottie Bernard doing?
A. I think she was up there towing logs and rafts, piles and so on.
Q. What kind of a boat was she?

A. She was quite a large boat.
Q. How large?
A. I couldn't say. I know she would carry quite a lot of lumber.
Q. Do you know how much water she drew?
A. About 7 feet, I guess, 7½.
Q. Did you see her up there frequently?
A. Oh, yes, I seen her up there.
Q. But you don't know what John Howard did on her?
A. No, sir, not of my own knowledge.

Redirect examination.

By Mr. Bailey:

Q. Did you know these waters, say about Rice's and Connor's Point, as St. Louis Bay? I say, did you know them as St. Louis Bay, above Rice's and Connor's Point?
A. Yes, between Rice's and Connor's and Grassy Point.
Q. You said in answer to one of counsel's questions that you went on the lake in '86 or were on the lake in '86. Were you captain?
A. Yes, sir.
Q. On a steamer out in the lake there?
A. I was running the Rambler in '86.
Q. And working on the lake mostly?
1500 A. Yes, out in the lake. We were on the lake altogether. We weren't in the bays at all.
Q. Was that the Rambler that Captain John Shea was on in some capacity, do you know? Do you remember him?
A. I don't know. I know it was the same boat that Mr. Brewer was speaking about.
Q. That was a tug, was it?
A. Yes.
Q. There wasn't but one tug Rambler around in those days, was there?
A. No, sir.
Q. You said that didn't go up the bays at all?
A. I said when I was in her we didn't go up the bays.
Q. That's what I mean.
A. We were running on the lake.
Q. You don't know of her going up beyond Grassy Point any time whether you were on her or not?
A. No, I didn't know of it.
Q. Have you an opinion as to where the mouth of the river is or was in those days?
A. I can give you my own idea, that is all.
Q. Let's hear what it is.
A. My idea would be that the mouth of the river would be there near the corner of the island.
Q. Big Island?
A. Yes, sir.

Q. Let's see. Have you been on the water all your life until the past year or two?

A. Principally.

Q. Out in Seattle for the last few years?

A. Yes, I was on the Sound and Lake Washington when I was out there.

Q. What were you doing?

A. Engineer.

Q. On what?

A. On different boats.

Q. You say you are living in Washington now, for the last year?

A. I have been living in Washington, D. C., not living there but been there visiting my daughter.

1501 Q. She is living there?

A. Yes, sir.

Q. You have relatives here in the city, haven't you?

A. Yes. This is my old home. I have a brother and sister here, several relatives.

Q. Your father was H. W. Wheeler?

A. Yes.

Q. He was one of the oldest settlers at the head of the lakes, was he not, came in 1850?

A. Spring of '55.

Q. And lived here until he died just five or six years ago?

A. Ten years ago.

Q. Your brother still lives here.

A. Yes, sir.

Q. One who recently ran for Congress or was candidate for Congress?

A. Has an office there in the Providence Building.

Q. And you have a brother Duane Wheeler in Minneapolis?

A. Yes, sir.

Q. He is much younger than you are?

A. I am the oldest in the family.

Q. I think you told me about one experience you had when you went up the river before '68, when you went on as master?

A. I suppose you have reference to when I was a boy.

Q. Yes.

A. The reason I remember it is it was when I was 7 years old. That was in 1856. We had been living in a log house, and my father went up to Millford to get a scow load of lumber, and he took me along, of course. And when we got down to Grassy Point we got caught in a northeaster and had to stay there all night without any bed clothes or any food and I thought it was a pretty rough night, so I remember it very plain. That was the first trip

1502 that I remember of.

Q. That is when you were going up to Millford?

A. Yes, sir.

Q. Taking what Wisconsin terms the old channel?

A. (No response.)

By Mr. Fryberger:

Q. Are you the Martin Wheeler that the citizens of Duluth gave a watch to in 1872 for gallant seamanship—What was that incident?
A. I saved a big tug from being wrecked in the great gale of November 13th and 14th, 1872.
Q. Right outside of Minnesota Point?
A. I think so.

By Mr. Bailey:

Q. Was that after the captain of the tug had deserted her?
A. Yes, sir.
Q. Abandoned her?
A. Yes, sir.
Q. And then you went out and got her?
A. My own tug was laying inside.

1503 H. G. INMAN was called as a witness on behalf of the State of Minnesota, was duly sworn by the commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Your name is H. G. Inman?
A. Yes, sir.
Q. Where do you reside, Mr. Inman?
A. Duluth.
Q. How long have you lived here about?
A. Thirty-two years.
Q. You are a brother of the late B. B. Inman?
A. Yes, sir.
Q. How long have you been connected with shipping at the head of the lakes?
A. At the head of the lakes?
Q. Well, with shipping on the lakes, Great Lakes?
A. Oh, forty odd years.
Q. What are you doing now?
A. I am with the Union Towing and Wrecking Company.
Q. What does that company handle?
A. It is vessel towing exclusively.
Q. How long have you been with the Union Towing and Wrecking Company?
A. Ever since their organization since 1889, I think it is.
Q. 1899?
A. 1899.
Q. Prior to that time who were you with?
A. With the Inman Tug Company.
Q. That was your brother's tug line?
A. Yes, sir.
Q. And how long were you with that line?

A. Since the spring of '87.

1504 Q. The business of that company was the operation of tugs?

A. Same as it is now, exactly.

Q. Did the Union Towing and Wrecking Company take over the old Inman line?

A. Took over the Inman line and the Singer line.

Q. You hold a master's license for the Great Lakes?

A. Yes, sir.

Q. How long have you held the license, about how long?

A. Thirty-two years.

Q. Thirty-two years continuously?

A. Yes, sir.

Q. You have sailed more or less up the bay, lower bay and upper by?

A. Yes, sir.

Q. And St. Louis River?

A. Yes, sir.

Q. Did your brother's company, or perhaps you were a member of the company—Were you a member of the B. B. Inman Company?

A. I was, yes.

Q. Did your company ever own the Ossifrage?

A. Yes, sir.

Q. When did you buy it and bring it up here?

A. In the spring of 1888 and let her go back in the summer of 1889.

Q. Where did you bring it from?

A. Bay City.

Q. What draft boat was she?

A. I don't remember exactly, somewhere between ten and twelve feet.

Q. Had she ever been up here prior to 1888?

A. No, sir.

Q. Your company bought her?

A. Yes, sir.

Q. There has been a man testified for the State of Wisconsin, by the name of Berg, and I am not sure but other witnesses testified, but this man testified that in '78 he went up the St. Louis Bay, went up as far as Fond du Lac on the Ossifrage, is that true?

1505 A. The man is mistaken.

Q. Did the Ossifrage ever go up as far as Fond du Lac or above Grassy Point during '88 or '89, when she was here?

A. She did not.

Q. Could she go up?

A. No, sir.

Q. Prior to the time the dredging was done in 1893 it would be impossible to take that boat——

A. Yes, we considered it so.

Q. Did you know where your boats were all the time?

A. Yes, sir.

Q. It was part of your business?

A. Part of my business.
Q. Then what became of the Ossifrage in '89, what did you do with her?
A. Let her go back to her former owners.
Q. Whereabouts?
A. Bay City.
Q. Did she come back to the head of the lakes?
A. She came back to the head of the lakes the year of the world's fair at Chicago.
Q. In 1892—or 1893?
A. I don't remember just what year that was, but the Smith-Fee Company bought her.
Q. She came up here that time, the year of the world's fair?
A. Yes, sir.
Q. And the Smith-Fee Company bought her?
A. Yes, sir.
Q. What did they do with her?
A. Ran her between here and Chicago.
Q. How long?
A. That season.
Q. Then where did she go?
A. Went back again.
Q. Now, Mr. Inman, I want to ask you whether you ever ran a boat up the St. Louis Bay beyond Grassy Point?
A. I did.
1506 Q. And prior to 1893, prior to the time the channel was deepened?
A. Yes, sir.
Q. So heavey draft boats could run?
A. Yes, sir.
Q. When was that?
A. 1885.
Q. How many seasons did you run that boat?
A. Just one.
Q. What boat was it?
A. The Mary Martini.
Q. And you were master of that boat?
A. Yes, sir.
Q. And how often did you make the trip?
A. Every Sunday during the pleasant weather in the summer.
Q. Where did she operate other times?
A. Ran between here and Two Harbors; part of the time between here and old town, and Sundays up the river.
Q. Ran as excursion boat all the time?
A. Yes, sir.

Mr. Bailey: You mean by "old town" Old Superior, don't you?
The Witness: Yes, sir.

Q. Now, Mr. Inman, calling your attention to Minnesota's Exhibit 1; you recognize that chart as the old Meade map, Government chart?

A. Yes, sir.

Q. Now I want to call your attention to these different channels—you notice Grassy Point?

A. Yes, sir.

Q. Marked Grassy Point on this map?

A. Yes, sir.

Q. You notice the line marked A to G and G to B and B to C?

A. Yes, sir.

Q. You notice Big Island where it is called "The Island" there?

A. Yes, sir.

Q. And you notice the red line from B to F and F to D?

1507 A. Yes, sir.

Q. And you recognize this river on up above the island?

A. I do.

Q. Now when you got to Grassy Point I want you to state what channel you used in going up, whether you went north of the island or whether you went south of the island?

A. Of the little island, you mean?

Q. No, I am speaking now of Big Island. Start at Grassy Point and state where you went?

A. We took this course up this way and then up around there (indicating) and then we generally took the shortcut through here (indicating) and sometimes we would come down the long way.

Mr. Gard: The witness now points to the red mark that runs over next to the Wisconsin shore E to F.

Q. Where is that little island, the one you spoke of as Grassy Island. I think it's right here (indicating).

A. Oh, yes, that's it. I couldn't locate it. Right in there, yes, sir. When we went the short-cut we left that to the north, went to the southerly of it.

Q. Then you went up around the northerly side of Big Island which way did you take, which route did you take?

A. Went around this way (indicating).

Q. Now then, you did point to a channel when you said you went up the short-cut you went in here next to Pokegama Bay?

A. Yes, sir.

Q. I wish you would examine that map. I want to call your attention in connection with this to channel H, this channel that they call the old channel, that run in around from Millford, and

1508 also to this channel that I called your attention to, A to G and B to C. You said you went around in next to the Wisconsin shore up this way. I want you to examine this again and see which one you took, whether you were mistaken in saying you took that one that went here or whether you took this one up here (indicating). Just examine the map carefully.

A. I guess this was it. We took a westerly course, I know, when we got through Grassy Point bridge. Came through the Grassy Point, went up quite a ways to the westward and we then took a shoot over towards this little island and then up towards the short-cut of the——

Q. Up towards the point B?
A. Yes.
Q. Now then, do you recognize this body of water that's in here marked H, sometimes called the Millford channel and sometimes been called the main channel by the Wisconsin people; I will ask you if you ever went up that channel, went around here, when you went up there?
A. No, sir, I didn't. I never knew anything about it.
Q. I will ask you whether or not below this little island, this Grass Island, right below it, was the junction of those two channels?
A. That is the short-cut and the long way.
Q. Do you know whether other boats took this same channel that you took, from A to G and from G to B and B to C, and if they went the short-cut, from B to D?
A. There weren't so very many boats, but that was the way pilot-taught me to take.
Q. Did you ever in all of your experience take this channel H?
A. No, sir, I did not, in those days.

1509 Cross-examination.

By Mr. Gard:

Q. Did you ever know any boat to take the channel marked H there?
A. Over here (indicating)?
Q. Yes, channel marked H.
A. No, I never did.
Q. You just said you never knew of that channel?
A. No, sir.
Q. You ran up the river one season?
A. Yes, sir.
Q. When was that?
A. 1885.
Q. What were you doing?
A. Captain of the excursion boat.
Q. You went up how often?
A. Once a week when the weather permitted.
Q. Did you take the cut-off or go around?
A. We took the cut-off, or most of the time; once in a while we would come back the other way.
Q. How often did you come back the other way?
A. I don't remember how often; perhaps every second or third time, something like that.
Q. Why would you come the other way?
A. Just to give the passengers a little different scenery, that is all.
Q. But you usually took the cut-off?
A. Usually took the cut-off and sometimes took the long way coming back.

Redirect examination.

By Mr. Fryberger:

Q. Captain, I show you Minnesota's Exhibit 56 and I will ask you what that is?
A. That is the Steamer Mary Martini.
Q. That is a photograph of the Steamer Mary Martini.
Q. You got that from Mr. John Bardon?
A. Yes, sir.
1510 Q. And is that a photograph of the same boat that Mr. Bardon owned prior to the time you got hurt?
A. That is the boat I sailed in 1885. I wouldn't swear to who owned her. I sailed for Joseph Lloyd. I understand that he got her from Mr. Bardon.

Mr. Fryberger: I will offer in evidence this exhibit, with an agreement on the part of counsel that we will have a photograph made of it if we can, and withdraw this and return it to Mr. Bardon, and if we can't get a photograph suitable we will withdraw it anyway and give it to Mr. Bardon.

Q. Captain, I will ask you another question. Who ran that boat with you that summer of 1885?
A. Simon Jeffry was engineer. He is now dead. And Captain George Lloyd was with me as clerk.

1511 GEORGE LLOYD was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Captain Lloyd, where do you live?
A. Milwaukee. My folks live there. In the summer I sail on the lakes.
Q. Are you a son of the late Joseph Lloyd?
A. Yes, sir.
Q. What is your age?
A. Fifty years old.
Q. How long did you live at the head of the lakes?
A. I was born at the head of the lakes.
Q. How long have you sailed vessels more or less?
A. Around 28 or 29 years; since I was 21.
Q. Did you sail on tugs and excursion boats up the St. Louis Bay, lower and upper, up as far as Fond du Lac during the year 1885 and until the year of the world's fair?
A. Not continuously.
Q. Well, but did you sail some of each year, or what years did you sail between those dates?
A. The year 1885, and then after that I hauled rock for Crowley

from Fond du Lac. That was about the second or third year after I had my license. I had to be 21 years old before I could get my license.

Q. And then you left the head of the lakes, did you, in 1893, the year of the world's fair?

A. I left in 1894.

Q. The year after the world's fair?

A. Yes.

Q. Where did you go?

A. Rainy Lake.

Q. How long did you stay there?

A. I was there till the beginning of the Spanish-American War.

1512 Q. Then you came back to Duluth?

A. Yes, sir.

Q. Now Captain, you are sailing a tug at the present time?

A. I am mate on a tug at the present time.

Q. Now I want to call your attention to Minnesota's Exhibit 1, being the Government chart, and I want you to look at this chart and locate yourself. You notice Grassy Point, the words "Grassy Point," on this chart?

A. Yes, sir.

Q. Are you familiar with this chart?

A. Well, I am more familiar with the new Government chart.

Q. But you have seen this?

A. Yes, sir.

Q. Now you notice Grassy Point there?

A. Yes, sir.

Q. And you notice these red lines, one marked A, G, B, and B to C, and then another runs off from B to D and then another starts here and goes to the Wisconsin shore and goes up in here, then there is another one here above the Grassy Point, marked H?

A. Yes, sir.

Q. Sometimes called the Millford channel. Now you sailed up there in 1885, did you?

A. Yes, sir.

Q. With Captain Inman?

A. Yes, sir.

Q. You were his clerk?

A. Clerking and learning and wheeling, anything.

Q. Man of all work?

A. Yes, sir.

Q. What channel did you take when you went up there, Mr. Lloyd?

A. Come down here (indicating) and went around here (indicating); took a circle here and went up here.

Q. That is, when you say "here" now, you pointed at the channel A, G, to B?

A. Yes. That is this channel from the bridge down.

1513 Q. I don't care anything about that. You got up as far as B. I just want to get it on the record.

A. Well, there was generally a lot of weeds there (indicating).
Q. At the point of the island?
A. Yes, sir. at the junction.
Q. You called that the junction?
A. This is the short-cut.
Q. That is the line from B to D, if you were on the cut-off?
A. Yes, sir.
Q. Then when you went north of the island which route did you take?
A. Right around here (indicating).
Q. That would be B to C?
A. B to C.
Q. Now did you ever use the channel H, being the channel that went up to Millford, that is when you went clear up the bay?
A. No. sir.
Q. Did you ever know of that channel H being used by other boats at that time?
A. No, sir.
Q. Now what other boats did you sail on, what other tugs did you sail on in towing logs and hauling rock prior to 1893?
A. You mean besides the Martini?
Q. Yes. The Martini was an excursion boat?
A. Yes, sir. The Agate and the Tourist.
Q. What about the McKay?
A. McKay and Agate are both the same; changed the names, is all.
Q. What did you do on the McKay and the Agate?
A. I was lining, wheeling.
Q. And what was the McKay hauling?
A. Picking up logs the time the Cloquet boom busted.

Q. Now, it has been testified here in this case by a number
1514 of witnesses who testified for the State of Wisconsin that when that McKay or Agate, as you call it, came down with rafts, that it came down, took the channel north of Big Island and came down and went through this channel H, called the Millford channel. I want to ask you if that is a fact that that boat ever went that channel?
A. Not while I was on her.
Q. You went down a great many times?
A. We picked logs in there.
Q. All summer?
A. Till they were picked up.
Q. In any of these boats that you sailed on did you ever take any different route than the route you have given us?
A. No, sir.

Cross-examination.

By Mr. Gard:

Q. Did you usually take the cut-off or go around northerly of the island?

A. We usually took the cut-off.

Q. Most altogether, didn't you?

A. Well, no, not altogether.

Q. How much of the time did you take the cut-off?

A. Depended on what we had to do. If there was logs up there at the north of the island we would take the north side of the island, if we had business up there; booms or anything to pick up, or rafts to tow down.

Q. If you were going clear up above Spirit Lake you always took the cut-off, did you?

A. Well, it was shorter. We took that.

Q. Always took the cut-off if your business was above Spirit Lake?

A. Yes, we did. We used to go around that way when we had excursion parties out to show them the river or scenery, come
1515 back a different way than we went up, occasionally.

Q. What were you doing on the McKay?

A. I was lining, tending lines, and decking, wheeling, anything we were called to do.

Q. What was your position on the boat?

A. At that time?

Q. Yes.

A. I was decking and wheeling and firing or anything I was told to do.

Q. When was that boat named McKay?

A. I couldn't say as to that. Her name has been changed three times.

Q. What was she before she was McKay?

A. Agate.

Q. And when did you run on the Agate and McKay, when did you begin?

A. She might have been called the John McKay when I was on her but I remember her as the Agate.

Q. When did you begin on her?

A. I began on her the year that the boom busted at Cloquet.

Q. When was that?

A. Well, sir, I don't know.

Q. How long did you run on it?

A. I was on her that season.

Q. Any more than that season?

A. I got my license that season and I sailed a boat afterwards.

Q. Which boat?

A. The Tourist.

Q. What were you doing on the Tourist?

A. Hauling rock from Fond du Lac to Duluth.

Q. Which way did you go, the short-cut, or go around northerly of the island?

A. We generally took the short-cut.

Q. Why would you ever go any other way than the short-cut; it was the nearest, wasn't it?

A. Well, there is times that it wouldn't be possible to go that way; if you had any towing that was going to be done up the main
1516 river you wouldn' take that short-cut and go way around.

Q. Didn't you say you were towing stone from Fond du Lac?

A. Yes, sir.

Q. Did you ever take the channel northerly of the island when you were towing stone from Fond du Lac?

A. No, sir, when I was told not to take it.

Q. You didn't take it ever?

A. I didn't take it with the stone.

Q. What else did you do except tow stone from Fond du Lac?

A. She had an excursion license; get a trip up the river we would go up.

Q. How often did you go up on an excursion?

A. I don't remember with the Tourist how often we did——

Q. What?

A. I don't remember how often, but she had a license to carry passengers, and if we got a trip carrying passengers we would take people out.

Q. How often do you remember going up with her as a passenger boat?

A. I don't remember taking passengers up the St. Louis on the Tourist.

Q. Then what did you do, then, up the St. Louis with the Tourist, except tow stone?

A. That is all I remember with the Tourist.

Q. Then you always went the cut-off?

A. We went the cut-off going to and from Fond du Lac.

Q. Then you always went the cut-off with the Tourist, didn't you?

A. With the Tourist, yes, sir.

Q. What other boat did you run on up the river?

A. Wadsworth.

Q. When was that?

A. Her name was changed to the W. S. Lloyd.

1517 Q. When was that?

A. That was after that. I couldn't say just when.

Q. About how long after that?

A. Well, I couldn't say exactly how long after; it would take me a little while to figure that out.

Q. How many years did you run that boat?

A. The Walter S. Lloyd?

Q. Yes.

A. That was before she was taken to Rainy River, Rainy Lake.

Q. Answer the question. How many years did you run her?

A. I ran her about four years.

Q. What did you do with her those four years?
A. Part of the time was on Rainy Lake.
Q. Did you run her up the St. Louis River any?
A. Yes, sir.
Q. How often?
A. Occasionally when I got an excursion party.
Q. How much water did she draw?
A. She drew about 6 feet.
Q. Did you go the cut-off or go around?
A. Well, I don't remember; we would go both ways. We generally would go up one way and down the other; it's according to which way the people aboard that was paying for the trip wanted to go.
Q. How many excursions did you take up with that boat?
A. I don't remember.
Q. About how many?
A. I wouldn't try to state how many, I don't remember. I know we took out excursions up there.
Q. A great many?
A. Well, a few.
Q. A few?
A. Yes.
Q. Now what other boat did you run up the St. Louis River?
1518 A. That's about all that I remember now.
Q. You say you never saw a boat in the main channel marked H on that map?

Mr. Fryberger: I am going to object to that on the ground that he didn't say that. He said he had been in there himself to get logs.

Q. The main channel marked H, did you say you never saw a boat in there?
A. I didn't say that. I said I never saw a boat take that route going up the river.
Q. What boat did you see in there?
A. The Tug Mystic I was sailing, and we dumped in here (indicating).
Q. Dumped what?
A. Mud.
Q. When was that?
A. Let's see. I don't just remember the year. I sailed the Mystic one year.
Q. When was it?
A. I don't remember.
Q. Was it in 1900 or after 1900?
A. That was after the channel was dredged out here.
Q. Dredged out where?
A. This channel.
Q. Well, were you dumping mud in the channel?

A. We were dumping in here (indicating).
Q. You are pointing now to the old channel?
A. I am pointing in here some place.
Q. Did you dump mud in the old channel there where you point? You pointed right on the old channel, didn't you?
A. Somewheres in there.

Mr. Fryberger: That is, channel H.

1519 A. We only ran in a short ways inside of the dock line. I was instructed to dump in there.
Q. Were you directed to dump in that old channel?
A. Not in the old channel; I was directed out a certain distance somewheres in here, I don't know exactly where, somewheres right here (indicating).
Q. You are pointing now to the old channel, aren't you?
A. Well, that might be it.
Q. Well, did you dump in the old channel?
A. I wouldn't say for sure that I dumped in the old channel.
Q. You aren't very sure about it?
A. There was a buoy there and the place directed for me to dump and I dumped.
Q. You don't know when it was?
A. Well, I don't just remember. I can probably tell you a little later on when it was.
Q. Where were you hauling that mud from?
A. We were hauling that from the bay.
Q. What bay?
A. St. Louis Bay.
Q. What part of St. Louis Bay?
A. Right out from the bridge and down this way between the beacon board of Superior and Duluth in what we call the basin.
Q. Was it Government dredging?
A. I will point it out.
Q. Answer the question. Was it Government dredging?
A. Yes, sir.
Q. You don't know what year it was in?
A. No, sir.
Q. And you can't approximate what year it was?
A. Not just at present, no. I could let you know be-
1520 cause I have got it written down in a book.
Q. Now then, aside from that time when you were in there, when you dumped in that old channel H, when you were dumping, did you ever seen any boats in that old channel marked H?
A. No. I never saw a boat in there in my life unless it was the Mystic, when I was dumping. I might have been partly in that channel. I was here some place (indicating).
Q. Did you know where the main channel of the river was when you were running up there?
A. Yes, sir. We always called this the main channel of the river going up here.

Mr. Fryberger: Pointing from A to G and G to B?
The Witness: Making this curve.

Q. You have heard that called the main channel of the river, that channel H?
A. No, sir.
Q. Look at the soundings and see how deep that is in the channel H?
A. Yes, sir, I see.
Q. How deep is it?
A. Twenty-four feet, 25.
Q. Now then, how deep is it over here on this other line that you indicated?
A. Eight, 7, 10.
Q. You never heard of that deep channed over there?
A. No, sir, I never heard of it.
Q. How long did you run up the river?
A. Well, I started on the Agate—or the first year was on the Martini in '85; then after that, the time that the boom broke at Cloquet; I forget what year that was in.
Q. That year, and what other towing did you do?
1521 A. One season on the Tourist.
Q. You said you always came down the shor-cut with the Tourist, didn't you?
A. Yes, sir, to the best of my recollection.
Q. And you did with the Agate unless you had some business on the north side of Big Island?
A. Well, we didn't do any scow towing with the Agate. It was all log work.
Q. Well, unless you had business northerly of Big Island you went the cross-cut, didn't you?
A. We went wherever the business was if the logs were on the north of the island we went there. If they were on the south we went there. We called the north of the island the main channel.
Q. North of the island the main channel?
A. Yes, sir, and the other the short-cut.

By Mr. Hudson:

Q. You say you call the north of the island the main channel; you mean Big Island?
A. I will show you. At the junction.

Mr. Fryberger: Points to the little island, Grass Island.

Q. Then at that junction——
A. Right here.
Q. And north of Pancake or Grassy Island that's what you call the main channel?
A. I call this to the north.

Mr. Fryberger: That is the line marked B to C in red on Minnesota's Exhibit 1.

A. That's what I called the main channel.
Q. That main channel doesn't end at C, does it?
A. Yes, sir.
Q. Does it go on north of Big Island around Spirit Lake?
A. It goes around, yes, sir. This is the main channel
1522 along here (indicating).
Q. You are pointing now to channel marked from C that goes near the Minnesota shore?
A. Yes, sir.
Q. And that goes to the Spirit Lake dock?
A. Yes, sir.
Q. And up the river from the Spirit Lake dock north of the island, are you?
A. Yes, sir, going around this way (indicating).
Q. And that is what you have always regarded as the main channel?
A. Yes, sir.
Q. And everybody that you ever have talked with have stated that that was the main channel?
A. Yes, sir.
Q. And that this part east of the island was the short-cut?
A. Yes, sir.
Q. And that was called the short-cut simply because it was a much shorter distance?
A. Shorter, yes, sir.

1523 ALFRED MERRITT, was recalled as a witness on behalf of the State of Minnesota and testified as follows:

Direct examination.

By Mr. Bailey:

Q. Mr. Merritt, I call your attention to a map which was marked, "Chart of harbor at Duluth, Minnesota, and Superior, Wisconsin, prepared under the direction of Major W. L. Fiske, Corps of Engineers, U. S. Army, 1902 to 1905," and which we will identify—— it is marked Minnesota's Exhibit 3. I will ask you to look at the white line which indicates the dredged channel just as it passes by the southwesterly end of Grassy Point and I will ask you if at the time that channel was dredged it went through the southwesterly end of Grassy Point?
A. Yes, sir, it went through, cut-off the southwest end.
Q. So that it left southwest of the channel a small little spit which was originally a part of Grassy Point?
A. Yes, sir, just a little grassy lump there on this side.
Q. I think that spit here on some of these Government's charts, that spit was formerly, originally, part of Grassy Point?
A. Part of Grassy Point.
Q. Was there ever any natural island down between Grassy Point and the Wisconsin shore?
A. Yes.

Q. Is this the old deep water here?

A. Yes, there was; really it was a rush island in through here (indicating). In low water it showed through here and there was rushes here (indicating).

1524 Q. Did the surface come above the water at all?

A. No, it didn't.

Q. Was there anything there more than rushes just as there were over most of the bay?

A. Just rushes.

Q. Was there any island at all?

A. Well, I wouldn't say there was, except might possibly in very low water.

Q. One of the Wisconsin witnesses named Morrison, I forget his initials, said that before there was any dredging there was an island right southerly, or between Grassy Point and the Wisconsin shore?

A. Well, it was a rush island there. It showed when the rushes were up there very plain, but you couldn't walk on it. It wasn't above the water; it was a good deal like these rushes used to be up in here (indicating).

Q. But there was a spit cut off there from Grassy Point at the time of the dredging?

A. Yes. Whether it's there yet I don't know.

Q. Was it at that point right off of Grassy Point that used to be called in the old times Devil's Elbow?

A. Yes, sir.

Q. And if that ever got up to Big Island that's moved up by later residents?

A. Yes, yes. It was called Devil's Elbow because the water, the rushes didn't cover it up. Darius Ayers, who died a day or so ago, said it was a devil of a place, and so called it the Devil's Elbow.

Q. I think some of the witnesses for Wisconsin have claimed that as early as '85, anyway, and earlier, there were boats went up beyond Grassy Point and up beyond Big Island that drew as much

1525 as 9 feet of water, as much or more, we will say, than 9 feet?

A. Yes.

Q. Was it possible prior to the time those bars were dredged out by the Government in '93 for boats of draft as much as 9 or more feet to get up beyond Grassy Point and up to Big Island?

A. The Steamer Manhattan went up to this side of Fond du Lac before we came here. We came here in September—October, the 28th of October. I think it was that year she went up. Now what draft of water she drew I don't know, but I know that later, that 9 feet was the extent of the draft of the steam-boats of that time, even after the Sault was built in '55 9 feet was the draft.

Q. Was the deepest draft?

A. Yes, deepest draft. What draft she drew when she went up there; whether she drew less than 9 feet by being pinned down I don't know. I know they had a great deal of difficulty about that, but they did get up within about a mile and a half of Fond du Lac, so I heard say. Then the Schooner Pierpont on which I sailed,

she drew 9 feet of water. We used to go up to Millford; Victor Desimval ran the mill at that time. That was in '65 and '66, '67 I wouldn't say. It was '68 I sailed. We used to lead up to about 7 feet, drawing about 7 feet. She was what we call a canal boat, Welland Canal, old Welland Canal, and she drew 9 feet when she was loaded. Used to finish out down at Conner's Point mill here, finish the load out down there or down to the Superior entry, with the scows, or, in fact, I guess we always finished there at Connor's Point.

Q. If it was loaded down to 9 feet she couldn't get out?

1526 A. She couldn't get out. She drew about 7 feet 4 inches or 6 inches through the bay and we used to tow her down by yawl boat.

Q. And was she loaded as deep as she could be gotten out of the bay?

A. Yes, the lower St. Louis Bay.

Q. The part between Grassy Point and Connor's Point and Rice's Point?

A. Yes, sir.

Q. And that was as deep as could get through there?

A. Yes. That is in towing her with the yawl boat. Of course, had a tug, could have loaded her a little more.

Q. Was that true as to depth up to the time the Government dredged the channel; was that as deep as you could take through?

A. Yes, up through St. Louis Bay, less than 8 feet, we had to carry. And on the upper river, on what the witnesses have called the main channel in the upper bay, where there was two places in there where—there was one place that was just above Millford, you can see it on this map here, and see a boom mark for that old Meade survey, just above there there was 8 feet of water and one place above near what we called Knowlton's place, between Knowlton's place and Marschand, about, there was about 8 and 9 feet of water; the rest was deep water, 10 or 12 or 15 feet.

Q. These two places the depths you have given were as much as you could get through there?

A. As we could get through there with, yes, sir. Of course, from Millford down there was lots of water, around the Devil's Elbow, and a third of the way into St. Louis Bay, lower St. Louis.

Q. Did you know Mr. John Chippeway?

1527 A. Yes, sir. Knew him as a boy but haven't seen him in probably 10 years.

Q. What was he doing?

A. I think the first time I saw the boy was the summer of '68. I was with Captain Wheeler here and I was running the Agate and I think he was on the scow along with a fellow named Jim Young, foreman of the scow, and I remember the boy then, half-breed boy, very pleasant boy. I remember him then; saw him many times since.

Q. He was never captain or anything of that sort?

A. Well, he might have been later on, I don't know.

Q. While you knew him?

A. Oh, no.

Q. Just doing rough work while you knew him?

A. Yes, yes.

Q. Referring to Minnesota's Exhibit 1, you have already testified with reference to that, but taking the commercial traffic that went up beyond Grassy Point and up to Big Island, by there in the early days, what proportion of the traffic would you say went either on the line A, or say, what proportion of the traffic went on the line A, G, B, as compared with the traffic that went through the channel marked H?

A. I think nine-tenths went up this way, just a rough guess.

Q. You would say nine-tenths would go up this line A, G, B; that would include what turned off and went up the cut-off?

A. Yes.

Q. And what went up the line B-C?

A. Well, I should say nine out of ten of the boats went up this what they called the short-cut.

Q. Then there would be a larger proportion including those that went up here, A, G, B, C, if you combine those with what went on the short-cut?

A. Yes, I think so. Nothing went that channel only as
1528 we went here to this dock.

Q. That is, you are referring to the channel marked H?

A. Yes.

By Mr. Fryberger:

Q. Mr. Merritt, this John Ojibway or John Chippeway, as he was called, testified for the State of Wisconsin that he was on those scows in which you and Captain Wheeler were hauling rock and that when you came down from Fond du Lac that you always came down to the north of Big Island and always came down through by Millford on this channel marked H, instead of coming down the channel C, B, G, and A, or down the channel D, B, G, and A; now what have you got to say about that?

Mr. Gard: Object to this. I don't think Mr. Chippeway testified to that.

Q. I read his testimony. I know what he testified to. I want to ask you whether or not John Chippeway is mistaken about the stone ever coming down that channel H?

A. I did come around there and go around this island at one time. It was at night, dark, in the night, and I lost this other channel and this line down here, and I think Chippeway was on the scow, and I came around here with a lead line and came through here in the night.

Q. When you got down to C did you come down C, G, and B in the usual way?

A. No, I didn't. I calculated to go through there but when I struck this shoal place I knew I was there, but the next sounding

showed deeper water, and I followed that deeper water down. That is the only time I remember of going there.

Q. Is that the only time you ever came down with a scow
1529 of rock through channel H?

A. As I remember; to the best of my memory.

Q. Otherwise you always came on the lines you have indicated?

A. Yes, sir.

Q. And you got on that time by mistake?

A. Yes.

Q. And that was in the night?

A. Had scows on the tow lines; came down that way.

Cross-examination.

By Mr. Gard:

Q. Mr. Merritt, to what extent did you navigate the St. Louis River above Grassy Point in the early day?

A. Well, I was pilot, really by permission, without examination. I ran the Agate in '68, about, well, I should say about four months.

Q. Was that the first, Mr. Merritt, in '68?

A. Yes, sir, that was the first that I was pilot in anyway. I navigated the river in small boats and so on, but that was the first.

Q. By boats you mean sailboats and rowboats?

A. Sailboats and rowboats, and also before the mast on the Steamer Pierpont. I commenced to sail on her in the spring of '65 and we did all the trading between the copper country, Portage Lake and Eagle River, that year and the next year. And '67 I didn't sail.

Q. Did the Pierpont go up the St. Louis River very much when you were on her?

A. Yes, sir. Every time we went up there. That is, we took a hold full of lumber, half a load, up at Millford; that's all we could take.

Q. And that Pierpont was running up to Millford?

A. Yes, sir.

Q. Is that all the sailing you did with the Pierpont up the
1530 St. Louis?

A. That is all with the Pierpont.

Q. And that was all done in the main channel, then, of the St. Louis?

A. Yes, sir, that was done in the Millford channel; in the main channel in the upper bay.

Q. Now what other boat did you next sail on up the St. Louis River?

A. I piloted a short time the George W. Frost, I think was the name, Schute's boat.

Q. I just wanted to ask you what you did up the St. Louis with the Frost?

A. She was running on the regular line up to Fond du Lac, between Superior and about where the canal is now. The canal wasn't cut through at that time; and then up to Fond du Lac and back, making a round trip a day.

Q. What course did you take, the cut-off?

A. Yes, sir.

Q. Always took the cut-off?

A. Always took the cut-off with the Frost.

Q. What boat did you next run on up the St. Louis?

A. Well, I never ran on any other—Oh, yes, yes, I did too. I used to have a scow that I used to carry lumber, a sail scow, or carry wood. I had her, I think, two or three years. And then I bought a half interest, along with my brother-in-law, in the Tug John Martin.

Q. On that sailing scow to what extent did you run up the St. Louis?

A. Well, my wood mostly was in the Pokegama Bay and in the river north of the island, on the man river north of the island, and some of it up on John Smith's island opposite where New Duluth is now,—where the Blast Furnace is now.

Q. Well, did you usually take the cut-off when you were sailing that boat?

1531 A. Yes, sir. I took a few loads in what we called Kingsbury Slough.

Q. Where is that?

A. That's just above the Millford Slough. And it is where the public park is now. They have a park up there now.

Q. And with those loads, then, you took the main, or what you call the Millford channel?

A. Yes, sir.

Q. Now, what next boat did you run up the St. Louis River?

A. I bought the Tug John Martin,—let me see; I will have to figure back so long, about 37 years ago; might be 38; but I think it was 37 years ago. I went down to Portage Lake and bought the Tug John Martin, which I operated two years at the head of the lake.

Q. And to what extent did you run that boat up the St. Louis River?

A. Well, I towed wood scows; instead of sailing my scow I used to tow it, and towed logs and poles and one thing and another from up the bay, Pokegama Bay and further up.

Q. Did you take the cut-off principally in going up the river with that boat?

A. Yes, sir, except when the business called me on the north side of the upper bay.

Q. Was that very frequent?

A. Not very frequent.

Q. Do you recall any instance where you went on the north side of Big Island?

A. Well, I towed one raft of logs out of the Knowlton, opposite of Knowlton's place; that is between Marschand and Joe Knowlton.

Q. Where is that?

A. That is this side of where Captain McDougall is building his shipyards now.

1532 Q. In the vicinity of the Millford mill?

A. Yes, just above. Probably half a mile or a mile;

nearly a mile. And then I took a raft of logs from Spirit Lake, from the inside in there of Spirit Lake, down through that way; but all my other towing was done through the south side of Big Island.

Q. When you took that raft out of near Millford there you went up the old or Millford channel?

A. Yes, sir, went up the north side of the bay.

Q. And when you brought that raft down from Fond du Lac you went in the old or main channel, didn't you?

A. Sure I came down that way, yes, sir.

Q. Now what boat did you next operate up the St. Louis?

A. Well, the John Martin was the end of my sailing except I went as pilot or something like that. I remember taking the Nellie Cotton down here for Sam Harris, down to the island, or something like that; that is the end of my sailing; never renewed my papers.

By Mr. Hudson:

Q. Mr. Merritt, calling your attention to the Meade map and to the channel immediately north of Big Island, you have seen boats on that channel, haven't you?

A. Why, sure.

Q. The Big Island is here (indicating)?

A. The Big Island is in here.

Q. You have seen boats, haven't you, land at Spirit Lake dock?

A. Sure.

Q. And you have at the brickyards opposite Tollis Island, haven't you?

A. Yes,—Opposite what?

1533 Q. Tollis Island.

A. Where is Tollis Island?

Q. It's a little island——

A. Is that the island you had the law suit about?

Q. Yes. You have seen boats there?

A. Yes. I saw the Cotton there going after brick.

Q. Haven't you seen a great many excursion boats?

A. Yes.

Q. Isn't that the way most of the excursion boats follow?

A. No, it is not.

Q. You have been up this way?

A. Oh, sure, I have been all over that bay.

Q. And this is deep water, isn't it?

A. Yes, deep water. There are some places, as I said, down here somewhere, where you find about 8 feet.

Q. Will you point it out?

A. There is another place down below there. You can see it better than I can. This is the Big Island (indicating). Where is Millford?

Q. Millford is up this way, right in here.

A. Between 8 and 9 feet there, I know. This is deep here. You have got to keep close to this side, though.

Q. That there is 11 and 13—is the shallowest?

A. Yes, that's right.
Q. And then it's on an average of about 20 feet?
A. Go on down.
Q. It's 20 feet down to——
A. I know it's on my map, is nine feet, and hardly that, there.
Q. You refer to your map. You don't mean the Meade map?
1534 A. Yes, I mean the Meade map. I have got one.
Q. I fail to find it on the Meade map.
A. Well, you will find it if you will look close there. You will find it if you went up with the boat, too, that drawed too much water. There just above Millford is another shallow place. The rest is deep.
Q. You refer to this place at C, don't you, what you have testified to as a bar?
A. Somewheres there, yes. Then there is another one up further. I know I dragged her there a good many times with a boat drawing 6 feet of water; that's what my boat drew, the John Martin.
Q. This time that you got out into this main channel in the night you didn't have any difficulty in getting down?
A. I went down with the lead line; sounded all the way down.
Q. But you had no difficulty so far as depth of water?
A. No, you bet I didn't, because I looked out for it.
Q. After you got down to Millford you made no mistake and followed the main channel?
A. Yes, followed the main channel around here.
Q. You say that your lead line showed deeper water there, is the reason you went off that way?
A. I got by this place here and didn't turn quite quick enough; I knew when I struck 8 feet of water I had got off.

Mr. Fryberger: When he says "this place" he means C on Minnesota's Exhibit 1.

1535 H. W. CHEADLE was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner and testified as follows:

Direct examination.

By Mr. Gard:

Mr. Gard: We put Exhibit 55 in evidence yesterday and it was from an atlas we didn't want to let go. We have the same plate here from another of the same atlases and we want to substitute this for Exhibit 55 (map referred to introduced in evidence and marked Wisconsin's Exhibit 55).

Q. Senator Cheadle, you live in Duluth?
A. Yes, sir.
Q. How long have you lived in Duluth?
A. Thirty-one years.

Q. What is your business?
A. Real estate business.
Q. How long have you been in the real estate business?
A. From 1886 to 1892 and from 1912 to date.
Q. I will ask you if there was a Roe's Atlas with maps in it in use in Duluth?
A. Yes, sir.
Q. How long has it been in use?
A. Since 1890 or '91.
Q. I show you Wisconsin's Exhibit 60 and ask you if that is a plate from the Roe's Atlas that you speak of?
A. It is.
Q. Has that been in general use here since the date of its publication as shown there in '90 or '91?
A. It has.
Q. And is this a plate out of the same Roe's Atlas out of which Minnesota's Exhibit 11 is taken?
A. It is. This is plate 30, page 127 of the atlas.
Q. That is, Minnesota's Exhibit 11 is plate 30?
A. Yes.
1536 Q. This Wisconsin's Exhibit 60 is what plate?
A. It has no number. It is the index map in the front of the atlas.
Q. How generally has this map been in use in Duluth since its publication?
A. Why, practically all the real estate offices and county offices and attorneys in the city have used it.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 60.

Cross-examination.

By Mr. Bailey:

Q. These lines that appear on Exhibit 60, in which is marked the word "channel," are just the same lines, so far as you know, and C, as the lines on Wisconsin's Exhibit 55, that indicate dock line, are they not?
A. This you mean here, "established dock line"?
Q. Yes.
A. It appears to be very closely so.
Q. And so far as Roe's Atlas that was published in Superior and Duluth and showed on these two plates, Exhibit 55 and 60, the channel, and showed on Minnesota's Exhibit 11 the state line, didn't it?
A. This map shows a line that purports to be a state line.
Q. That is Minnesota's Exhibit 11?
A. Yes.

1537 ALFRED MERRITT was recalled as a witness on behalf of the State of Minnesota, and testified as follows:

Direct examination.

By Mr. Bailey:

Q. I call your attention to Wisconsin's Exhibit 43 and just southwesterly of Grassy Point and across the white line that indicates the dredged channel there appears to be a little yellow spit there; was that originally a part of Grassy Point before the channel was dredged there?

A. It must have been because there was no island before that. I think they cut off a piece there and left it out there.

Cross-examination.

By Attorney-General Owen:

Q. Where is that little Reed Island you spoke of?

A. Reed Island lay alongside of this channel in through here (indicating).

Q. And where with reference to the spit that you have just pointed out?

A. It laid over here. Here was the Devil's Elbow in here. This was shoal water here. Shoal water commenced here and the rushes used to come up there and give us notice where the channel was but before that we didn't have any notice where the channel was.

Q. But now the Reed Island you spoke of awhile ago——

A. It was along there.

Q. It wouldn't be so long?

A. It was quite long. That island wouldn't show only when the reeds came up. It wasn't grass on it.

1538 September 20, 1917—10 a. m.

MARTIN WHEELER, was recalled as a witness on behalf of the State of Minnesota, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Mr. Wheeler, there has been some talk here about the upper St. Louis Bay opening, or parts of it, earlier than other parts of the bay in the spring as the ice was going out. Did you notice from time to time how the ice went out?

A. I noticed some years.

Q. Of course you never went up there with a boat in the spring before the ice went out?

A. No, sir.

Q. But can you see it from different parts of Duluth, see the whole expanse of water there?

A. If a person is up on the side hill on a clear day you can see it very plain.

Q. Tell us how the ice went out there in the spring so far as you know?

A. Why, it used to practically follow the channel that the boats ran. It would stay to a certain extent over the rush passages. You could see the lines of water about where these red marks are.

Q. Would there be any difference as to when the ice went out between the place where the boats traveled, as shown by these red lines from A to G, G to B, and B to C, and B to D, than it would in the Millford channel?

A. Both practically opened the same.

Q. Would there be any difference between the waters that went north of Big Island and the waters that went south of Big
1539 Island?

A. No.

Q. Except that where the rushes were the ice would hold longer?

A. Yes, sir.

Q. Now you spoke to me this morning about the testimony with reference to when the mill was dismantled; that you had refreshed your recollection and that you wanted to correct some slight discrepancy. What was it?

A. It was in operation in '68. It came to my memory afterwards. I remembered afterwards it was in operation in '68.

Q. That was the mill at Millford?

A. Yes.

Q. That was when it was run by old man Desimval?

A. Yes, sir.

Cross-examination.

By Mr. Gard:

Q. Were you ever up on the water above Grassy Point in the early spring when the ice was breaking up?

A. You mean on the ice?

Q. Yes, on the ice or on the water when the ice was breaking up.

A. Not when it was breaking up.

Q. Were you ever on the shore up there when the ice was breaking up in the spring?

A. Not on the shore.

Q. Where did you take your observation from?

A. Up on the hillside up back of Grassy Point.

Q. How far is that from the water?

A. Well, from the nearest part of the channel it would be from a half mile to a mile and then at the end of Grassy Point it would be two miles.

Q. And there is all the place you ever observed it from?

A. Yes, sir. Only place a person could observe it. If
1540 you were down on the level you couldn't see.

Q. You couldn't observe it without being up there, you think?

A. Where I was on the hillside you could see the open water plain.

Q. What was it that made you take notice of it up on the hill?
A. We were always interested in seeing when the bay would be opening up in the spring of the year.
Q. Did you go up there for the purpose of observing it?
A. No.
Q. Didn't go up there for the purpose of observing it at all?
A. No, sir.

Redirect examination.

By Mr. Fryberger:

Q. As a matter of fact, as I understand your testimony, you could tell better from the point from which you made your observation than you could by going down and standing on the bank of the bay, couldn't you?
A. Sure.
Q. What did you say about it being the only place you could observe it from?
A. That is the only place where you could get a good view of it.
Q. Could you see perfectly well from the point at which you observed at these different times?
A. Yes, sir.
Q. Where the ice went out first?
A. Yes.

1541 Mr. Bailey: I will offer in evidence Minnesota's Exhibit 57, being a soil map of the north part of northwestern Wisconsin, survey of Burnett, Washburn, Sawyer, Douglas, Bayfield, and Ashland, in part counties, by Frederick L. Musbach assisted by Carl Thompson and Theodore Durmenwald and Otto Berg, Wisconsin Geological and Natural History Survey, bearing date 1914, and issued by the State of Wisconsin Geological and Natural History Survey, E. A. Birge, Director College of Agriculture, University of Wisconsin. I take it that you admit that this is the publication that appears on the map?

Mr. Gard: Objected to as incompetent and immaterial.

Mr. Bailey: I take it you will admit it is the publication such as it purports to be?

Mr. Gard: I never saw it before; I don't know.

Mr. Bailey: I assumed, of course, you would admit that. If you want to put us to the expense and trouble of proving it, of course you can do so. That came from the Minnesota Historical Society—their records.

Mr. Gard: I never saw the map and I looked in the records, all the maps in Wisconsin in the Historical Library office and I don't think I found this map.

Mr. Fryberger: How do you suppose that map got into existence if it isn't what it purports to be?

Mr. Gard: I don't know but I would like to know something about it.

Mr. Bailey: All we offer it for is what appears on its face. We

certainly never invented all the names that appear up in the
1542 northwest corner of that map.

The Commissioner: Does it purport to have been published by the state?

Mr. Bailey: Yes, I so understand.

Mr. Bailey: Offer Minnesota's Exhibit 58 in that connection, might as well, at the same time.

Mr. Gard: What admission do you want?

Mr. Bailey: Just that it is what it purports by the legend upon the map to be. That doesn't cover the objection that it is irrelevant, immaterial, or incompetent, or anything of that sort, but just save us bringing up some officer to prove that it is the publication it purports to be; that is all. You still save your objection that it is immaterial.

Mr. Gard: I am sorry you didn't bring it up when the Attorney-General was here. He controls this case, but I am going to admit it and save the objection, but I don't like to do it in the absence of the Attorney-General.

Mr. Bailey: Exhibit 58 which was offered has the legend upon it, "Wisconsin Geological and Natural History Survey, E. A. Birge, Director, W. O. Hotchkiss, State Geologist. Geological map of part of west end of Lake Superior by F. T. Thwaites, 1911, based upon field work in 1910. Unpublished soil work for this survey by F. L. Musbach in 1910. Also upon the maps and reports of the Geological Survey at Wisconsin, Minnesota, Michigan, and the United States, and of the United States Department of Agriculture, United States Lake Survey, and upon railway surveys, United States Land
1543 Survey, county maps, and reports of town and county officer.

Mr. Gard: We admit that the maps are what the legends show them to be, saving the objection.

Mr. Bailey: That applies to Exhibits 57 and 58.

Mr. Fryberger: Saving the objection that it is immaterial.

Mr. Gard: Yes.

Mr. Bailey: That applies to Exhibits 57 and 58, of course.

Mr. Gard: I want to save the objection that it is incompetent, because I think it would be incompetent if you would prove just what the legend purports to be.

Mr. Bailey: That's all right, but I say this admission, whatever it is, applies to 57 and 58.

Mr. Gard: Yes.

The Commissioner: The exhibits are received in evidence subject to the objection.

Mr. Fryberger: About that competency, do you understand that that goes to the lack of proof in any way?

Mr. Bailey: No; he admits the publications are what they purport to be.

It is stipulated that the note on Minnesota's Exhibit 8 near the left-hand corner, under the St. Louis River, which is illegible on the exhibit, is as follows: "Over the bar of the St. Louis there were 8 feet water and 6 feet could be carried up to the post of the American Fur Company."

Mr. Bailey: I offer in evidence Minnesota's Exhibit 59,
1544 with the legend and title, "A true map of the survey made under the seventh article of the Treaty of Ghent by order of the commissioners, and signed by Peter B. Porter, Anthony Barclay, commissioners, under the sixth and seventh articles of the Treaty of Ghent, David Thompson, surveyor. Filed as of the 23rd of October, 1826, by order of the board October 22nd, 1827, and the signature of the secretary through Richard Williams, assistant secretary, and certified as a true copy of the original filed by the order of the board of commissioners under the sixth and seventh articles of the Treaty of Ghent, number IX. S. Thompson, draughtsman and surveyor. This particular instrument being taken from the history and digest of the International Arbitration to which the United States has been a party, by John B. Moore, Volume VI, map 36, 53rd Congress, 2nd Session, house miscellaneous documents, number 212, serial number 3267."

Mr. Bailey: Will you make the same admissions as you did on 57 and 58?

Mr. Gard: Yes, subject to the same objection.

The Commissioner: The exhibits are received subject to the objection noted.

Mr. Bailey: I want to offer from what is known as document 451 of the 25th Congress, second session, portion of the report of the British Commissioner to the Government of his Britanic Majesty and to that of the United States of America, a report of Anthony Barclay, Esquire, commissioner appointed on the part of his Britanic Majesty to carry into effect the sixth and seventh articles of the treaty
1545 between his said Majesty and the said United States, concluded at Ghent on the 24th day of December, 1814, an extract from that report and which I will read into the record, and this extract is found in a book entitled, "Executive Documents 25th Congress, 2nd Session," and appears to be marked 11, 1837 and 1838. The extract which I wish to offer is found on page 65 of this document, which document is printed about the middle of the book that I have referred to and the extract commences about two-thirds of the way down this page 65, as follows: "In support, if any be required, of this construction of the terms of the treaty and to events that there is an allowed and generally received and well understood signification attached to the expression 'middle of the river' &c., the undersigned would refer to Vattel on the law of nations, b. 1, c. 22, s. 260-3, 'If neither the one nor the other of the two nations near the river can prove that it settled first in those countries, it is to be supposed that they both came there at the same time, since neither of them can give any reason of preference; and in this case the dominion of each will be extended to the middle of the river.'"

"To show what Vattel means by 'the middle of the river' as above quoted the undersigned refers to s. 274 of the same book and chapter where he employs the same words with respect to lakes. 'If,' says he, 'this lake is situated between two states, it is presumed to be divided between them at the middle, while there is no title, no con-
1546 stant and manifest custum to determine otherwise.' Now it can hardly be contended that by the middle of the lake a

channel is intended where all is deep and safe and navigable from shore to shore for tens or for hundreds of miles. Where would the channel of Lake Ontario or Erie or Huron or Superior be found? Waters all to be divided by a boundary line 'through the middle' thereof by the very commission which this report originates and to which it refers. They might be 100 or 200 or 300 miles in breadth according to the direction of the intended navigation. As well may a channel of the Black and Caspian Seas or of the Mediterranean, nay, even of the Atlantic Ocean, be sought for. The true and only reasonable interpretation is this: the terms used in reference to lakes can apply only to the equi-distant line between the shores, for they cannot be said to have channels, and the same words apply without modification to rivers, must bear the same construction, namely, the equi-distant line between the banks of the river."

And from the same document, Part IV, found in this publication at Page 74, about the middle of the page, as follows:

"Section 98. Under this view also the undersigned had regard to the lake by which the St. Louis River discharged itself into Lake Superior. That river after running through several lakes towards Lake Superior, when it reaches the last named lake, itself expands into a lake upwards of nine miles in length and from two-thirds of a mile to one mile and a third in breadth (as may more fully
1547 appear from the affidavit of Mr. Samuel Thompson, one of the assistant engineers of the board to whom this survey was committed, placed in the appendix under letter E), after which it discharges into the great Lake Superior, not by a bay as does the Pidgeon River, but by a narrow mouth formed by two mere points of land and so affording no continued river requiring the title of, 'Water Connection' between it and Lake Superior, but connected intimately and immediately by a strait without length; so that in proceeding from Lake Superior to this lake which discharges into the St. Louis River one goes at once from Lake Superior into a long lake all of which will be perceived more satisfactorily from the maps of the commission, a certified copy of the part of which will also be found in the appendix under the letter F."

Mr. Bailey: I hold in my hand a book which is entitled on the back, "Wisconsin Survey, Bulletin number XXXVI, Physical Geography of Wisconsin. Martin." And on the title page, "Wisconsin Geological and Natural History Survey. A. E. Birge, Director. W. O. Hotchkiss, State Geologist. Bulletin number 36. Educational series number 4. Physical Geography of Wisconsin by Lawrence Martin, A.M., Ph.D., Associate Professor of Physiography and Geography University of Wisconsin, Madison, Wisconsin. Published by the state. 1916." I will ask you gentlemen if you will agree that this book is what it purports on this title page to be, and that this Lawrence Martin is the Professor Martin who testified as one of the witnesses for Wisconsin?

1548 Mr. Gard: I understand that to be the fact.

Mr. Bailey: I want to offer in evidence from Page 22 of this publication, and running on to Page 23, the following:

"Lake Superior, St. Louis River, Chequamegon Bay.

"The Indians likewise led the first French explorers westward from Sault Ste. Marie along the south shore of Lake Superior so that the Wisconsin coast from Montreal River to Superior and the St. Louis River was early explored. Father Allouez's establishment of the mission of LaPoint du St. Esprit and Chequamegon Bay in 1865 was four years after the adventurous journey of Radison and Groseilliers to the vicinity of Ashland. The repeated trips of other explorers to the foot of the lake where they soon established what is now the village of Fond du Lac, Minnesota, were an inevitable result of the natural highway which led from the Maritime provinces of Canada by way of the Great Lakes to the end of Lake Superior and thence up the St. Louis River to the Mississippi and Red River head waters. Du Luth went up the St. Louis River from Lake Superior in 1679."

Now we want to offer in evidence also from this publication a portion of pages 157 and 158, which were read into the record by Mr. Fryberger yesterday during the examination of Professor Sardeson. I take it it will not be necessary to read it again.

Mr. Gard: No, but I object to it as irrelevant and immaterial to this case.

1549 Mr. Bailey: And offer from page 415 the following: Heading: "Submergence and the State Boundary."

"It was provided in 1846 that the western boundary of Wisconsin should extend due south from the St. Louis River to the main branch of the St. Croix, starting at the first rapids in the St. Louis above the Indian Village according to Nicollect's map. When the boundary was actually marked six years later the rapids in question were difficult to locate. Upon the map alluded to the Indian Village is shown but with no rapids at just that point. A Chippewa Indian assured the surveyor that there were rapids nearly opposite the Indian village only a few years before. The surveyor accepted the statement as evidence that the lake level was rising. Nevertheless he proceeded up stream to the first rapids of that bay where he located this boundary. This resulted in giving Wisconsin a strip of territory a quarter mile wide and over forty miles long, that might otherwise have been in Minnesota. But the decision was just because the submergence of the rapids had commenced centuries before the boundary was even proposed."

Mr. Gard: Do you claim that the boundary between Minnesota and Wisconsin extending southerly from the falls is wrongfully fixed, and seek to change it here?

Mr. Bailey: We are just submitting evidence of your own witness here.

Mr. Gard: We want to know, we want to offer sur-rebuttal——

Mr. Bailey: I didn't understand that the pleadings had particularly to do with the west line.

1550 Mr. Fryberger: We don't make any claim to that; can't be any claim.

The Commissioner: The sections read are received in evidence subject to objection as to materiality.

H. W. CHEADLE was recalled as a witness on behalf of the State of Wisconsin, and testified as follows:

Direct examination.

By Mr. Gard:

Q. You were sworn yesterday?
A. Yes.
Q. I will ask you to look at Minnesota's Exhibit 30 and ask you if that is a plate taken from an atlas that is in use in Duluth?
A. It is a copy of a plate from an atlas.
Q. Copy of a plate from an atlas. The Frank Atlas, is it, you refer to?
A. Yes, sir.
Q. I show you Wisconsin's Exhibit 61 and ask you if that is a copy of a plate that also appears in the Frank Atlas?
A. It is, with this exception, that the plate in the atlas has the difference—that is, this index plate in the atlas has the different plates outlined, a number of different plates in the atlas, which does not occur on this map.
Q. That is, on that plate as it occurs in the atlas there are index numbers from the map referring to other pages of the atlas for the sectional plates?
A. Yes, sir.

Mr. Gard: We offer in evidence Wisconsin's Exhibit 61.

1551 Q. Who is Mr. Frank who got out that atlas?
A. He was county surveyor of St. Louis County, Minnesota.
Q. Has he also been connected with the city engineer's office of Duluth?
A. Worked in the city engineer's office for some time and engaged in the profession of civil engineer here for a long period of years; used to be a member of the firm of Patton & Frank.

By Mr. Bailey:

Q. These lines either side of the words "old channel" you understand to be the dock lines as you testified last night with reference to the other——
A. I think perhaps I was a little under misapprehension as to the other map. If you would ask that question again I would like to explain that. That is, as I understand it, you referred to the proposition on Roe's Atlas, as to their both being published, but that was a Superior map and therefore probably prepared the Duluth map in the same way, but the Duluth map was published a year prior to the Superior map. That was the idea I got from your question.

Mr. Bailey: No, I was referring to these lines as indicating the dock line.

By Mr. Gard:

Q. You don't understand the lines here above Grassy Point where "old channel" is marked, to be dock lines, do you?
A. No, sir.

By Mr. Bailey:

Q. You don't know as to that other than what appears on that plat you referred to on the Roe map yesterday?
A. Yes. My general investigation and familiarity as to where the dock line is.
Q. I am not talking about where it is; where it was.
1552 A. I don't know where the dock line was. At what date?
Q. Oh, I think we will let it go with the question as you had it last night.

By Mr. Fryberger:

Q. This business was a private enterprise of Frank, wasn't it, getting up this atlas?
A. Yes.
Q. Just a private affair?
A. Yes.

By Mr. Gard:

Q. How generally has this atlas been used since it was published in the City of Duluth?
A. It is used in the City Hall, in the Court-House, and in practically all real estate and attorneys' offices in the city.
Q. When was it published?
A. In 1902, I think.

By Mr. Fryberger:

Q. Mr. Cheadle, it's a well known fact that Frank was about the most inaccurate surveyor that ever was in Duluth, isn't that true?
A. There has been a good deal of criticism of his work.
Q. Well, just to be plain about it, he was known as a bungler, wasn't he, on surveys?
A. I never ran across the proposition on the question of surveys, of his bungling.
Q. Didn't he used to go around after he got out his plats and atlas and make changes and get hold of the atlases he had put out and put on pasters to correct his bungling?
A. I know there were a number of mistakes in the distances that he had marked on the atlas.
Q. And isn't it a fact that he finally abandoned the profession of surveying, quit it entirely, long before he left Duluth, and
1553 went into the rock business?
A. I think he was connected with the Duluth Crush Stone Company.

Q. But he left the surveying business entirely long before he left Duluth?
A. I am under the impression he did.
Q. In other words, he was an absolute failure as a surveyor?
A. I wouldn't say that.
Q. Well, that is what people thought of him generally, wasn't it?
A. No, we——
Q. Just answer the question, whether you know or not?
A. Not as a surveyor. No; I think he was a success.

By Mr. Gard:

Q. It remains, does it not, that his atlas is in general use in Duluth to this day?
A. Yes, sir.
Q. There is another atlas in existence and Roe's Atlas is still in existence and used here, isn't it?
A. Yes, sir.
Q. So it isn't the only atlas in Duluth?
A. (No response.)

By Mr. Fryberger:

Q. The Roe Atlas is a much higher standard for accuracy; isn't that conceded by all men who are familiar with the business, lawyers and courts?
A. I think that Roe's Atlas is considered to be more accurate than Frank's atlas.

It is stipulated that Minnesota's Exhibit 56 is withdrawn and may be returned to the owner.

1554 J. H. JEFFRY was called as a witness on behalf of the State of Minnesota, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Fryberger:

Q. Your name is J. H. Jeffry?
A. Yes, sir.
Q. How long have you lived here?
A. Came to Duluth in 1869.
Q. And what has been your business practically all your business life?
A. Since I came here it has been following the water, after the first year.
Q. You commenced, then, in——
A. 1870 I commenced to follow the water. I worked on the railroad in 1869.
Q. Did you ever sail up the waters of the St. Louis Bay?
A. Yes, sir.

Q. The head waters of the lake?
A. Yes, sir, the whole length of the lake, for that part.
Q. Did you ever sail with Martin Wheeler?
A. First man I ever sailed with.
Q. What boat was that?
A. Tug Amethyst.
Q. What did you do with that on the St. Louis waters?
A. We towed logs, piling, or anything there was to do, and carried stone to the Superior entry.
Q. Stone from Fond du Lac to the Superior entry?
A. Yes, when it was rough weather on the lake we couldn't get into the shore to get rock and was allowed to put the sandstone in at that time.

1555 Q. Did you sail up and down the bay, Superior Bay, St. Louis, upper and lower bay, and the St. Louis River as far as Fond du Lac every year from 1870 till 1893 when the channel was dredged out by the Federal Government—I don't mean the main channel but I mean when the channel was deepened?
A. I guess there was a few years previous to working that channel I didn't. I was towing vessels altogether, because I tell you I ran the Tug Bennett, towed seven years after I quit the Cotton. I would have to count up the years I was on the different boats to tell you. I was seven years on the Bennett towing from the Cranberry River.
Q. You were outside?
A. I was outside all the time. I was up the river a few times between.
Q. When did you commence towing outside of these seven years, about when?
A. 1890, I guess.
Q. 1890?
A. I think it was around there.
Q. From '70 to '90 did you go up the river a great deal?
A. All hours of the day and all hours of the night.
Q. Are you familiar with all those channels up there?
A. Yes, sir. I could use to go up any hour of the night. Didn't care how dark it was.
Q. Are you familiar with the Millford channel too, been in there to get logs and so forth?
A. Yes, sir, slabs, wheel slabs, and tow down scow for fuel; took it down to Superior on an old dock we had down there.
Q. From Desimval's little mill?
A. Yes, Desimval's Mill, we called it.

1556 Q. I am going to ask you to look at Minnesota's Exhibit 1. Here is Grassy Point?
A. Yes, sir.
Q. Here is the Millford channel. Take this line from A to G, and G to B, and B to C, and then from B to D, and here is Big Island?
A. Yes.
Q. Now what channel did your boat take?

A. I generally ran after I rounded the end of Grassy Point, we called that the Devil's Elbow, that's really the name of it.

Q. Did they ever move it further up the stream later?

A. Some does. Some call it the Devil's Elbow.

Q. After you got around Grassy Point——

A. We turned that and I would go right across—Where is that little island, part of it dredged away now?

Q. Between B and C and B and D. It was right in there.

A. We used to strike right across. There was a point of rushes circled down there something like that (indicating), and we circled just to clear that point. In the spring we couldn't see them rushes and then we had to look out for that point.

Q. If you wanted to go the cut-off you would go which side of the little island?

A. I would go on the south side. If I wanted to go up river I would go on the north side.

Q. About how many feet from the island?

A. Pretty close to it either way.

Q. Is that the route that all of the boats took in the early days?

A. Yes.

Q. Before the deep channel was dredged so that they could get down there with the scows of lumber?

1557 A. Yes, we took that way unless something called us—I have taken logs out from what we called Keene's Creek, and that's straight in at the base of Grassy Point in on the land. You might say come out in that point, the creek does.

Q. There was a witness testified, young Desimval, that from '88 on down that he logged there for several winters and towed out rafts, about 10 million feet, and that you did all the towing, and he said that you always brought his rafts and all his logs in around by Millford instead of going around this channel you speak of?

A. Not unles he had them in to Millford and wanted them pulled out of there.

Q. He is mistaken about that?

A. He is mistaken about that unless he had put some logs down off the hilltop, which the old man Desimval did drop some down where the Duluth Heights used to come out, just west of that he let them down with a line for his own little mill. Whether the young fellow ever logged down there I don't know. Did he say what mill I delivered them at?

Q. Yes, I think he said Peyton, Kimball & Barber?

A. I don't know where young Desimval is now. He used to live upper town in Superior, down near where the old brewery used to be.

Cross-examination.

By Mr. Gard:

Q. Mr. Jeffry, what boats did you sail up the St. Louis?

A. The first was the Amethyst and then I sailed the Cotton for

Peyton, Kimball & Barber, for 17 years. Then I ran her engine two years and a half, but you might say I was sailing up
1558 the river at the same time because the captain wasn't acquainted and I used to show him up, and very often he would get aground coming down?

Q. What other boats did you run up the St. Louis?

A. I owned a half interest in the Jack Jeffry for years, but I never sailed her as a berth; and I also sailed the Siskowit, a little boat, but not up the river; but I have been up there with the Fred and Will.

Q. In the '70's and '80's what boats did you sail up the river?

A. For four years and a half I was on the Amethyst, from '70 till, that was four years and a half. I went on in '70. That would fetch me '74, along late in the fall of '74. I went on to the Cotton, I went on as engineer and I ran her engine two years and a half and then I sailed her continuously after that, which made 17 years all told. Mr. Peyton can tell you it's 18 years but I say No; it's 17. We had an argument on that.

Q. That took you up to 1900?

A. That's about the time I went to the Tug J. W. Bennett.

Q. Did you go up the river with the tug Bennett?

A. No; only to Merrill & Ring's Mill at West Duluth, right by Mitchell & McClure's.

Q. How long did you sail the Bennett?

A. Seven years continuously along the south shore altogether.

Q. Then your sailing up the St. Louis River prior to 1900 was confined to the Amethyst and the Cotton?

A. Mostly.

Q. What other boats?

A. Well, I said the J. H. Jeffry. I owned a half interest in her for years. She was then called the Agate, not the Agate but the John McKay when I bought her. She was bought and her
1559 name was changed from the Agate to the John McKay Junior and then we rebuilt her, me and my brother together, and we called her J. H. Jeffry Junior after my youngest son.

Q. When did you sail her up the river?

A. I never sailed her as a berth, but just jump on her occasionally for a run, run her up the river and let the other boys run her.

Q. Prior to 1900 did you sail any other boats up the river except the Agate, the Cotton, and the Jeffry?

A. I had been up with the Fred and Will. I had been up with the Tug Ricker, a yacht for the elevator firm Spencer & Rupley and that crowd. He's a man in business down here in the Lyceum Building now.

Q. Any other boats you sailed up the river prior to 1900?

A. Not as a berth.

Q. Your principal sailing, then, was on the Amethyst?

A. Amethyst and Cotton, you might say, was my principal, up the river.

Q. And what were you doing with the Amethyst?

A. Towing rock for Superior piers; bringing down little rafts of logs, piling. There was a good deal piling at that time used. The canal wasn't cut the first year I was on her and there was piling for different things here. They piled across the bay and built a dike here between the two cities and we used to pull stuff for that. And when the weather was fine we went to the North Shore and got rock. R. G. Coburn had the contract.

Q. Was the principal part of your business on the St. Louis River or off of the St. Louis River?

A. Clean to Fond du Lac when there was anything that wanted to be towed.

Q. Where was the principal part of your towing?

1560 A. At that time?

Q. Yes.

A. Oh, the principal, whenever the weather was fine was the North Shore.

Q. Just went up the river——

A. When the weather was bad we would go up there and take three scows and get stone; three scows at a time.

Q. Did you sail the cut-off?

A. Sailed the cut-off with rafts, with logs, and scows, and everything else. Three scows at a time would come down with the Angus.

Q. You usually took the cut-off, did you?

A. With scows that way pretty near all the time.

Q. Then the principal part of your sailing was through the cut-off?

A. A good deal of it. Some of my other sailing we rafted some logs right in Spirit Lake. They dredged the channel there way up right abreast of Little Pokegama, came into Spirit Lake, that they could sluice the logs in there and then sort them out, around near the old Spirit Lake dock.

Q. When was that?

A. Oh, that was in about 1877 or '8, I guess. I can't give you the date exactly, not now. I could, may be, when I first started to tell you. I think I got the old books yet.

Q. The Nellie Cotton drew about how much water?

A. Six and a half.

Q. And the Amethyst?

A. About six feet two.

Q. Then you had no trouble in going the cut-off with either of those boats?

A. No, nor the bigger boat either.

Q. You went the cut-off most altogether?

1561 A. I went with the cut-off unless I was caught with something below that I had to get below.

Q. You went the cut-off every time unless there was something was—I didn't understand that.

A. That was got below the cut-off and I would have to come back against the current if I got through the cut-off.

Q. When it was just occasionally you went north of Big Island?

A. No; I towed a lot of logs that was put in below the westerly end of the cut-off.

Q. When was that?

A. Different years; some years more than others; they used to put in them days. It was pine all through. Wherever there was a batch of logs they told me to go and get them and I would get them if the tug could get over the bottom.

Q. You know where the main channel of the river is above Grassy Point?

A. The way I used to go the main channel when I would go up I would strike, just as I say, to the north of the little island.

Q. You knew where the main channel was? There is a channel over there called the main channel?

A. I don't know what they called it.

Q. Did you call it the old channel?

A. I didn't know any name for it because I never used it but very little unless I had something that was below the mouth of Victor's old mill that I could come in right above and come down right by that same island. That was about 20 feet wide when the rushes was up and I would go up there and go the same as if I was coming from the cut-off.

Q. You were present in the court-room when this case
1562 opened in July, weren't you?

A. I was there three or four days, yes.

Q. Did you come there to testify?

A. I was called there but I wasn't on the stand.

Q. Do you know why you weren't called then?

A. No. I went away then and I didn't hear any more about it. I went below and came back.

Q. You don't know why you weren't called?

A. No, sir.

Q. You were at the court-house three or four times?

A. Four or five times.

Q. Four or five times?

A. Yes, I think so.

Q. Who asked you to come to the court-house?

A. I guess Mr. Bailey; I think Mr. Bailey; I think that's where I got my—yes.

Q. You heard them talking about the bar up northerly or up above that little island, that Pancake Island, didn't you, at that hearing?

A. Yes. We never had any name for that island. You call that Pancake.

Q. Some of them did. It's in the vicinity of the Zenith Furnace Company.

A. It's almost abreast, I guess.

Q. You heard them talking about a bar in the channel?

A. There was a flat place there.

Q. You heard somebody testify that they couldn't get over that, didn't you?

A. No; I don't know. I don't know who done that. I always got over it.

Q. You always got over it?

A. Yes.

Q. Had no trouble in getting over it?

A. No, not if I kept in the right place. I have taken men
1563 up and showed them the way up, and tend to my business coming down and they would run on coming down.

Q. Did you run over it very often?

A. Oh, I suppose a good many hundred times in my life.

Q. Had no trouble to go over it?

A. No, sir. The yacht I said I went up with we tried to go up one Fourth of July. They got up there somewhere and couldn't get any further. Then along two months afterwards, come over to Peyton's mill. I wasn't doing anything. Mr. Peyton was alone and he wanted to know if I had anything to do and I said not particularly and he said there is a crowd of us on the Picket. Can you take her up to New Duluth. And I looked at him, I wasn't any too well pleased with some of the people that was on that I knew, and I didn't know whether to refuse him; he told me he was on and everything, and his folks was on, they was always good to me, and I had worked for them for years; I was in the blacksmith shop getting something; I don't know what I was fixing; but he says, "You'd better come along with us." I went down, and we went up; we had no trouble at all.

Q. You always went over that bar island when you went northerly of Big Island?

A. Yes, sir, there was no other way to get by. Didn't make any difference what channel you go over, you had to go past that flat place if you went north of the little island.

Q. And if you went north of the Big Island you always went——

A. That would take you north of Big Island.

Q. All your navigation that you did northerly of Big Island was made northerly of that bar?

1564 A. Certainly. You couldn't go any other place without going over water shallower than that was. I had a litle channel that I could pass on in Kingsbury Slough. I had a little place right tight to the land where you could almost jump over. You could set a pike pole on the bottom and jump through, but there was no one ran that as a channel. I had to sneak in a little hole up above where McDougall is building his ship-yard now. Lower down than that there was a little brick-yard. I used to steal into that little hole and come down. I had some logs of my own in Kingsbury Slough and I had to deliver them at Peyton's mill and I had to get my tug as near as possible to save paying labor bill, so I found my way in through there.

Q. You spoke of the captain of the Jeffry going aground when you were going up there once, didn't you?

A. The Tug Jeffry, you mean?

Q. Yes.

A. Oh, we have had her on the bottom thousands of time up there. The time when night falls logs came down, boom broke——

Q. You can answer the——

A. I might say there isn't a one of the tugs that hasn't been aground up there. They would get in holes; couldn't avoid it, when we would crowd up on the beach to get a little closer to a batch of logs. That is all in our business. I went to Spirit Lake after I spoke of that channel being built through, tried to get a little batch of logs. He told me to go up and get them and we found we couldn't, because the current had set back so rapid it took the logs away, and they couldn't make it work, so they gave it up, and I ran in this little hole down where the old dock used to be, below where the new channel goes now, and I set the tug
1565 right up agin the bank. All at once, that was the Cotton she was high and dry up on the side. There wasn't four feet of water where the tide had set in and took that tug out. My brother was engineer for me.

Q. As I understand you, when you towed from Fond du Lac or above from Spirit Lake you always came the cut-off route?

A. Not always but most of the time.

Q. When would you not come the cut-off?

A. Sometimes I would get a long string, may be three or four batches of logs. Sometimes they would get a tail on me. I wouldn't get the right swing. The curve wasn't just as I expected to find it. We all get fooled in our business, in that way, and I would have to drop down and come down the other way; go north of the little island instead of south.

Q. That would be just occasionally?

A. Not very often. After a while we put a sheer boom so they wouldn't do that on me. Had to have it fixed so any other boat we wanted to pass or let the scow through, they could let it loose.

Q. You have navigated that main channel over next to the Minnesota shore above Grassy Point?

Mr. Fryberger: Object to that as it is an attempt to mislead the witness. He has already said that he called the main channel the one that he traveled. If you mean the Millford channel I think you ought to explain it to the witness.

A. Very little.

Q. But you have navigated it?

A. Yes, sir, I have navigated all of the water up there that was fit for a boat to float.

Q. There was plenty of water down there, wasn't there?
1566 A. There was down near the point, yes.

Q. There was all the way up, wasn't there?

A. You had that same flat water as you did going through here. Same flat place I don't care which way you went.

Q. You had plenty of water between Grassy Point and that bar, didn't you?

A. Yes, sir.

Q. Very deep water?
A. Either side of it plenty of water.
Q. You had more water in that channel over next to the Minnesota shore, didn't you?
A. I think the chart shows more. I never sounded it. I had no occasion to sound it. I had plenty, all I needed; and I didn't sound it; and I never looked at the chart.
Q. So far as you know all the boats go over that bar that you spoke of above this little island, that went northerly of Big Island?
A. They either went there or else they went through the cut-off or they didn't get up to Fond du Lac.

Redirect examination.

By Mr. Fryberger:

Q. As I understand it, you went up the channel that you described, the one that you said you always took up around this little grassy island,—you had been up there hundreds of times, haven't you, north of that island?
A. Yes. I would be safe enough to say that.
Q. And you had no trouble in getting over there with the Nellie Cotton drawing six and a half feet?
A. No.
Q. Or the Amethyst drawing 6 feet 2?
A. No.

(Hearing continued to September 24th, 1917.—10 A. M., at Superior, Wisconsin).

1567 SUPERIOR, WIS., Monday, Sept. 24, 1917—10 a. m.

Mr. Gard: Does Minnesota rest for rebuttal, do I understand?
Mr. Fryberger: Yes. We rest.

JOHN STEVENS, was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Your name is John Stevens?
A. Yes, sir.
Q. Where do you live?
A. I live in Kenosha, St. Louis County, Minnesota.
Q. What is your business at the present time?
A. Farming.
Q. What was your former business?
A. Engineering.
Q. What kind of engineering?
A. On tug boats.

Q. Did you use to live in Duluth?
A. Yes, sir.
Q. When?
A. Twelve years ago.
Q. When did you first live at Duluth?
A. The first I was there was about forty years ago. I never lived there.
Q. You lived at Superior?
A. Yes, sir.
Q. When did you come to Superior?
A. I came there I think it was in 1860 or '61, I think.
Q. Well now, with reference to the war, when was it?
A. It was about the close of the war, somewheres.
Q. That was in '65, then?
A. About that.
Q. What time did you come here with reference to the
1568 war—just after the war you say?
A. Just a little after the war.
Q. Did you work at Millford any?
A. Yes. We moved over from here to Millford, from Superior to Millford.
Q. How old were you at that time?
A. Fourteen years old, as near as I can remember.
Q. By Millford you mean the saw-mill on the St. Louis River up near Hugier Island?
A. Right across from Hugier Island.
Q. That is now called Big Island sometimes?
A. I don't know what they call it now but at that time we used to call it Hugier Island.
Q. Who was running the mill?
A. A gentleman by the name of Victor Desimval.
Q. You were home there with your father?
A. I moved there with my father. My father worked in the mill, under Mr. Desimval.
Q. What did you do?
A. I was doing chores around the house and anything that I could do at that time.
Q. How long did you live at Millford?
A. Somewhere about five or six years, I think; I am not positive.
Q. Was the saw-mill running while you were there?
A. Yes, sir.
Q. Were they shipping lumber from the saw-mill?
A. Yes, sir.
Q. Was there a dock?
A. Yes, sir.
Q. Where was the dock located?
A. Right out from Millford, out from the slough; where the mill stood there was a dock out from the mill.
Q. Where was that dock out from the mill there; where was that located?

A. Well, I couldn't exactly tell.

1569 Q. Was it on the channel or not?

A. Right along the edge of the bank of the channel itself or right on to the edge of the channel, the deep water.

Q. How did they get the lumber out to that dock from the mill?

A. They used to get it out on scows, pole it out, men used to pole it out with poles.

Q. And from the dock they would lead it on boats?

A. Load it on schooners. There was a couple of schooners ran up in there.

Q. Shipped it down the river?

A. Some used to go to Cleveland; some used to go in to Superior; some used to go wherever they were—they didn't use much in Superior at that time, but they used to go principally down the lake.

Q. When did you first become familiar with the channel in which boats ran up above Grassy Point and in the vicinity of Millford, the water up there?

A. Well, sir, I was familiar with the channel on the Tug Amethyst.

Q. What were you doing on the Amethyst?

A. I was firing at that time.

Q. Who was running it?

A. Martin Wheeler.

Q. What was the Amethyst doing?

A. Towing rock from——

Q. Fond du Lac?

A. Fond du Lac, yes, sir.

Q. To where?

A. Superior entry.

Q. How long did you run on the Amethyst with Martin Wheeler?

A. I think I ran on the Amethyst with Martin Wheeler somewheres about three years, probably more; but to the best of my knowledge, to make sure, I know I was there three seasons?

1570 Q. Was the Amethyst towing rock most all the time?

A. Mostly rock at that time, and of course there used to be a few logs coming down.

Q. Did you tow rock from anywhere else except Fond du Lac?

A. We have towed from the North Shore here but not up the river, though.

Q. When the sea was heavy where did you go?

A. Sir?

Q. How did it come you went up the river part of the time?

A. There was a quarry, quarrying rock all the time.

Q. Did the weather have anything to do with your going up the river?

A. Once in a while it did.

Q. Did you go up there in stormy weather?

A. I don't think the time we was towing rock there made any difference about the weather, because our work was mostly all the time.

Q. Mostly all the time?

A. Yes.

Q. You had been working at the saw-mill at Millford there before that?

A. Before that, yes.

Q. How long had you been at Millford before you ran on a boat with Martin Wheeler?

A. I think it was about five or six years we was at Millford and then when the mill shut down, of course, we had moved away from there. Probably I can on the safe side say about six years. I have forgotten, you know, right up to a——

Q. Did you become familiar, when you were living at Millford, with the channel in which boats ran up the river?

A. Well, the only way I come to be familiar with that channel—May I be allowed to talk?

1571 Q. Yes.

A. Is by seeing these heavy draft boats running up and down there when I was a boy before ever I went on to the tug.

Q. Where was the channel that the boats usually took?

A. The channel come right out from Grassy Point and down through to what they called the Millford Slough. That is alongside of where the Millford dock used to be, and follow on down.

Q. Down or up?

A. Up, I should say, not down. Excuse me. Follow till it gets up to the Devil's Elbow, what they call, and then turned and went up between Kitt's Meadow to Fond du Lac. That is the channel I am talking about.

Q. Did the boats that loaded lumber at Millford take that same channel?

A. Took that same channel, took that channel from the Millford dock to the Grassy Point and that way.

Q. Now was there any channel through the cut-off?

A. There was a channel ..ut it was never called a channel. They could run there by light draft boats, by any boat not drawing much water, because there is a middle ground out in this channel you are speaking about. There is no channel whatever as I know. That is, I never knew it to be a channel. It's a place where they could run, all right, and I have run it myself with light draft boats; but once in a while you would go through there; once in a while you wouldn't——

Q. On which side of Big Island did you go when you went the main channel?

A. Of Big Island?

Q. Yes; Hugier Island, you call it?

A. North side.

Q. And how close to this Millford dock did you run?

A. Well, it seems to me that Millford dock would be, to the middle of the channel, I think we used to run somewhere about

1572 300 feet, as near as I can think about it. Of course there was deep water right up to the dock and this channel was quite wide there.

Q. When did you first begin to run up the river there with Martin

Wheeler; about what time do you think it was? Was it in the early '70's?

A. I think the first year I ran up there was in 1872 or '3, I ain't positive.

Q. And you say you ran with Martin Wheeler three years?

A. Three years and probably more. I would say three years, to be on the safe side of it.

Q. When you were towing rock from Fond du Lac what channel did you used to take?

A. We used to take, when we didn't have;—sometimes we used to go up with a couple, two or three scows, and when we had one scow we turned in around that narrowest turn in what we called the Devil's Elbow.

Q. Came through the cut-off, you mean?

A. Yes, sir.

Q. When you had one scow?

A. Yes, sir.

Q. Did you usually have more than one scow?

A. We used to average two; mostly on an average had two scows.

Q. Sometimes had three?

A. Yes. You could crowd in there around this here narrow place, that is this course, you know, if you took your time and run the risk of running up on the shore.

Q. You mean the cut-off now?

A. Yes.

Q. But what channel did you, usually take when you had two or more scows?

A. Come down the main channel by Millford and come down through Spirit Lake.

1573 Q. Was that channel sometimes called the Millford channel?

A. It was always. I never knew it to be called any other way than the Millford channel. We used to call it that clear in the early days.

Q. When you went around on the north side of Big Island did you always take that Millford channel?

A. Not always.

Q. What channel did you take?

A. We used to take, we used to run the risk of running in around a sort of around in there where this middle ground is and try to get through that place, get through there in order to save time, and sometimes wouldn't save time.

Q. Which channel did you usually take?

A. We used to usually take with heavy draft boats took the Millford channel.

Q. Well, with the Amethyst what channel did you usually take?

A. Sometimes would take the Millford channel, sometimes take this cut-off because she didn't draw that much water; she could go any place almost. She would be drawing four feet of water.

Q. Then you say you would sometimes go down on what you call the middle ground?

A. Sir?

Q. Did you say you would sometimes go down on what you call the middle ground?

A. Yes, sir.

Q. How often did you do that?

A. Not very often because we was afraid we would run aground and stay there.

Q. Have you known Martin Wheeler to run aground on that middle ground?

A. Yes, sir, I have.

Q. And when he had two or more scows which channel did he usually take?

A. When he had three scows he used to take the inside
1574 channel, that would be the Millford channel.

Q. By the inside channel you mean the Minnesota side channel?

A. Sir?

Q. Do you mean next to the Minnesota shore?

A. I mean next to the Minnesota shore, yes, sir.

Q. And he did that in towing rock from Fond du Lac to the entry out here?

A. We have toward the entry.

Q. Did he take that Millford channel when he had three scows in towing rock from Fond du Lac?

A. He used to take the Millford channel when he had three scows.

Q. Now when he had two scows what did he do?

A. Probably sometimes he would take this channel. I don't know as it's a channel. It's no channel but we have run where this middle ground is as I understand where these people have given their testimony there is a channel, that middle ground; they used to go through that way and run the risk of getting through; we used to go through that way sometimes.

Q. How many scows would the Amethyst usually tow?

A. On an average about two.

Q. Sometimes one?

A. Sometimes one, but the average tow would be about two.

Q. And when you had one you came the cut-off, did you?

A. Came the cut-off and sometimes we would squeeze through there with two.

Q. Did you run on any other boat up the river?

A. Yes, sir.

Q. What other boats?

A. I ran up there on the Tug Record, belonging to Mr.
1575 Inman.

Q. When did you run up on the Record?

A. Let's see. I think—I forgot mostly about the year. It was anyway about 20 years ago since I was in her.

Q. What channel did you take with her?

A. We took the main channel, the Millford channel.

Q. Same channel you took with Martin Wheeler?

A. Because she couldn't go any other channel because she was

too heavy a draft. She had to go that channel. There was no chance for her.

Q. Did you run up on any other boat?

A. Yes, sir. I made one trip up there on the Tug Merrill.

Q. When?

A. I guess that must be about 21 years ago. I just made one trip up there.

Q. What channel did you take then?

A. Took the main channel.

Q. What you sometimes called the Millford channel?

A. Yes, sir.

Q. Did you run up there on any other boat?

A. Yes. I was up there with the John Martin belonging to Alfred Merritt.

Q. When was that?

A. I forget when that was. I couldn't say exactly, but I ran on her with Alfred Merritt.

Q. Was it before you ran the Amethyst or after?

A. It was after.

Q. Was the Amethyst the first boat you ran on?

A. Yes, sir.

Q. Did you sometimes hold the wheel?

A. Once in a while, occasionally; not very often, though. I have been at the wheel going up there.

Q. Now you say you ran as engineer?

A. Yes, sir.

1576 Q. Did you ever hold any other position on boats up the river?

A. No; I never held any more, only I was engineer on the tugs.

Q. Can you read the maps very well?

A. No, sir. That's something I don't know nothing about. I don't know anything about maps.

Q. Did you use any maps when you ran up the river?

A. Never seen any of them aboard unless they had them somewhere where I didn't see them. No, sir, I never did see any maps on the boats.

Cross-examination.

By Mr. Fryberger:

Q. You say your name is John Stevens?

A. Yes, sir.

Q. And you live in the township of Kenosha?

A. Yes, sir.

Q. Lived there for 12 years?

A. Yes, sir.

Q. And you say you are farming?

A. Yes, sir.

Q. Keep one horse?

A. I haven't got any at all.

Q. Your farm is rather limited?
A. Yes. I have got a piece of land out there. I have got quite a few potatoes.
Q. You lived there 12 years?
A. I lived there longer.
Q. How long have you lived there?
A. About 15 years, I think, on the farm.
Q. How much longer did you live there when you weren't living on the farm? How much longer did you live in the township of Kenosha?
A. How much longer?
Q. Yes, than 15 years.
A. Well, I have been living out there for about 12 years. I have had that farm but I didn't live out there that long.

Q. You have lived on this land in Kenosha for 12 years
1577 and you have owned it for longer than that?

A. I used to go out once in a while, out to Kenosha long before that.
Q. How long have you owned that land?
A. My wife owned it long before I did.
Q. Then you married her and got the land; is that it?
A. Yes, sir.
Q. What is there, about 40 acres?
A. Twenty-eight acres.
Q. That is how far from Duluth?
A. Twelve miles.
Q. And there is no railroad nearer than Duluth?
A. Oh, yes. The Missabe Road goes through it, or, no—it's the Canadian Northern.
Q. But your town is Duluth. That's where you sell your potatoes?
A. That's our market place.
Q. You haul your potatoes in with the wagon?
A. Yes, sir.
Q. Now do you keep a cow?
A. Sir?
Q. Have you got a cow?
A. No, not now.
Q. You don't even keep a pig, do you?
A. No.
Q. As a matter of fact, you aren't farming at all. You are just living there on a little piece of land where you raise a few potatoes; isn't that all?
A. Some potatoes.
Q. You haven't got a horse nor a cow nor a pig?
A. I used to have.
Q. But you haven't now. Did you ever have a horse?
A. I have got a part interest in a team, yes.
Q. Where is the team?
A. Working on the county road.
Q. Who owns the other interest?

A. Man by the name of Jack Bergstrom.
1578 Q. Who keeps the team?
A. Me and him keeps it.
Q. Where, at his place or your place?
A. Up to Kenosha, at his place.
Q. What interest have you got in that team?
A. I have got about $250.00.
Q. You have got no interest in any cow?
A. No.
Q. What have you got, an acre and a half clear of stumps?
A. I don't know; probably more than that.
Q. There isn't much more?
A. Well, say seven acres clear of all stumps.
Q. Clear of all stumps?
A. Yes, sir.
Q. What have you got in there?
A. About two acres of potatoes in there.
Q. What is the rest?
A. All in hay. It didn't grow very much this year of anything.
Q. Now you have given us your experience as a farmer?
A. Yes, sir.
Q. You say you came to Superior in 1860 or '61?
A. About '61.
Q. That was the close of the war?
A. Yes, pretty close.
Q. How long did that war last?
A. That war lasted a little over four years, I think.
Q. And that would be four years before 1861?
A. Yes.
Q. Who was that war between; who was fighting in that war?
A. Do you want me to explain the presidents?
Q. I don't care anything about the presidents?
A. Between the North and the South.
1579 Q. Where was the South located?
A. Well, South was located in the southern part of the United States, wasn't it?
Q. Do you know what states were in it?
A. Kentucky and——
Q. Ohio? What about Ohio?
A. Yes. Virginia.
Q. Yes. Pennsylvania?
A. Sure.
Q. Sure. And Illinois? Illinois was in the southern states, wasn't it?
A. Part of it.
Q. New Jersey, wasn't it?
A. Yes.
Q. And Delaware? Don't look around at these attorneys. Turn around this way. What about Delaware? Delaware was in the southern states, wasn't it?

A. Isn't Delaware in the New England states?
Q. Delaware is in the New England states, you think?
A. Yes.
Q. Now this man Captain Wheeler, on whose boat you worked, was a thorough seaman, wasn't he?
A. Sir?
Q. Captain Wheeler was a thorough seaman?
A. He had that name, yes, sir.
Q. You don't doubt that he was?
A. I don't say he wasn't.
Q. He was a good sailor, a good captain, and Captain Wheeler knew exactly where those channels were up the St. Louis River, didn't he?
A. He ought to be. He was raised there and run there.
Q. And he would know where he traveled, wouldn't he?
A. He naturally would.
Q. Wouldn't he know more about it than you would?
A. Well, he wouldn't know any more about it than I would, for he pointed it out to me himself.
Q. Was it any of your business to find the channel when
1580 you were working for him as engineer?
A. It was my business after he told me where to go.
Q. You were running the engine?
A. Yes. But sometimes they would ask a man, engineer even, to hold the wheel.
Q. Don't you think that Captain Wheeler knew exactly where he went when he traveled that upper bay?
A. He ought to, yes.
Q. You never held any master's license to run a tug, did you?
A. No, sir, I never did.
Q. What do you call a heavy draft boat?
A. Well, anything that was too—Well, I think the Tug Record drawed somewhere about 10 or 12 feet, or between 10 and 11 feet.
Q. Ten or eleven feet would be what you would call a heavy draft boat?
A. Them days, yes, it would; that is, with this class of tugs.
Q. The Record never went up the St. Louis Bay until about twenty years ago, you said?
A. Sir?
Q. The Record never went up above Fond du Lac till about twenty years ago?
A. I said she went to Fond du Lac.
Q. That is about twenty years ago?
A. Yes, sir.
Q. When was the dredging done by the Government above Millford so the deep draft boats could go up?
A. That's been done later. I knew nothing about that at all.
Q. Didn't you know there was dredging done by the Government in 1893 so the Record could get up?
A. I don't think there was any dredging so she could get up twenty years ago.

Q. You don't think the Government did any dredging up
1581 beyond Grassy Point twenty years ago?

A. They might have done a little dredging around Grassy Point for some saw-mills or something but not in the channel.

Q. Who asked you to come here to talk at this trial?

A. Who asked me?

Q. Yes.

A. I was in town here and some of the old folks I am acquainted with asked me if I wouldn't come up here and I come up here, some folks I knew.

Q. Do you know John Bardon?

A. Well acquainted with John and Jim.

Q. John talked to you about this?

A. Not as much with John as I am with Jim.

Q. Did John Bardon talk to you about this?

A. A little about it, yes, sir.

Q. When did he talk to you about it?

A. Talked to me about it this morning.

Q. Can you read?

A. Not much; a little bit.

Q. Now you went up one trip on the Forward, did you?

A. I made one trip on the Forward.

Q. And who was captain?

A. Captain Singer.

Q. How long did you run with Alf Merritt?

A. About two years.

Q. What was he towing; hauling rock?

A. He was hauling rafts.

Q. And that was two or three years after you traveled with Wheeler on the Amethyst?

A. Yes, sir, after I traveled with Wheeler.

Q. As a matter of fact, Mr. Stevens, you don't know what you are talking about, do you, on those dates?

A. I don't see why.

1582 Q. Alf Merritt quit running on the water along in 1868, didn't he?

A. Excuse me. That's right, too. Excuse me, but it's twenty years ago that I will remember; it's twenty years ago since I was up there. I went up there on the record. Alf Merritt has quit more than twenty years ago sailing, I admit that.

Q. Alf Merritt quit sailing in 1868, didn't he?

A. Yes, he did.

Q. You didn't run with Wheeler until the——

A. I think about '72, I think, then, after I worked with Merritt, after that,

Q. Alf Merritt quit sailing long before '70, didn't he?

A. He did?

Q. I am asking you?

A. No, sir.

Q. If he said he did, what do you say about it; is he mistaken?

A. Long before '70, sailing? Well, sir, I must say one thing I don't think he did.

Q. Now you say you can't tell anything about a map?

A. No, sir, I don't know nothing about a map.

Q. Can you count?

A. I can count.

Q. How high up can you count?

A. I can count quite a little bit.

Q. Now I want you to step down here, anyway, whether you can read or not, and I want you to look at Wisconsin's Exhibit 53 and tell me what number that is I am pointing at?

A. That's 10.

Q. Now do you see this part here, we will cal that Grassy Point, Can you read that, Grassy Point?

A. Yes. G-r-a-c-y, yes, sir.

Q. G-r-a-c-y? That's what it says, Grassy Point. Is that what you read, G-r-a-c-y?

A. Yes.

1583 Q. And how is Point; can you spell that, give us the letters on "Point"?

A. P-o-i-n-t.

Q. G-r-a-c-y P-o-i-n-t?

A. Yes.

Q. You see these markings out here to the south of Grassy Point. Do you know what that means, these figures in there, these soundings?

A. No, sir, I must say I do not.

Q. You couldn't tell us where you went, from that map, could you?

A. Not by the map, no, I could not. No, I couldn't; not by the map.

Q. How much water did the Amethyst draw?

A. A little over four feet of water.

Q. Take the chair again if you can't do anything with the map. Have you been drinking some today?

A. No.

Q. Not at all?

A. No, sir. I had a glass of beer.

Q. Just one glass?

A. Yes, sir, when I got out of bed this morning.

Q. What time did you get out of bed?

A. Got out of bed between half past six and seven o'clock.

Q. Now sometimes you called this place where you lived Mullford, sometimes Millford. Which was it?

A. Millford.

Q. Up to the time Desimval quit Millford there were only two boats that you ever saw that went up that river, up that bay beyond Grassy Point? There was the Stillman Witt and one other boat. Those were all the boats that went up there; isn't that so?

A. Excuse me. What did you say? There was the Forward.

Different boats went up that channel while I lived there and
1584 Mr. Desimval lived there.

Q. Was there anything besides the Stillman Witt and the Forward?

A. She went up there once in a while but she never ran there.

Q. She never ran there?

A. Not very often, I guess. I don't remember very much about her. I have seen her, though.

1585 THEOPHILE DIAN was called as a witness on behalf of the State of Wisconsin, was duly sworn by the Commissioner, and testified as follows:

Direct examination.

By Mr. Gard:

Q. Are you hard of hearing?

A. Yes, sir.

Q. Sometimes call you Young, do they?

A. Yes. All the old people call me Jim Young.

Q. Where do you live?

A. Duluth.

Q. How long have you lived in Duluth?

Q. Oh, quite a number of years. I lived there twice.

Q. When did you come to Duluth?

A. I came to Superior first. There was no Duluth when I come up to the head of the lakes.

Q. When was that?

A. Sometime about fifty years ago; I can't tell the year.

Q. About fifty years ago?

A. Somewheres near.

Q. Have you lived at Superior?

A. In Superior, yes.

Q. Were you up at Millford any?

A. Yes.

Q. What were you doing at Millford?

A. I worked there in the mill in the summertime and in the wintertime in the woods getting logs.

Q. When was it you were at Millford?

A. That was about—Well, it was right away after I come up to the head of the lakes the first year. That must be 48 or 49 years ago, as near as I can remember. I can't tell the year; kept no record of it. It was somewhere's about that.

1586 Q. How long did you work at Millford?

A. About three years.

Q. Who was running the mill?

A. Well, a fellow by the name of Victor

Q. Desimval?

A. Desimval.

Q. What did you do at the mill?

A. Why, I done pretty near all kinds of work. I piled lumber most of the time and ran the trimmer.
Q. Was there lumber shipped away from Millford there?
A. Yes.
Q. Was there a dock?
A. There was a dock there in front, a little dock.
Q. Was that on the channel?
A. Right at the edge of the channel.
Q. How did they get the lumber out to the dock?
A. Little scow; took it from the slough up to the dock.
Q. What did they take the lumber out there for?
A. Why, to ship it away.
Q. Where did they ship it to?
A. I don't know, but I guess the most of it was shipped to Chicago.
Q. Boats came up there and got the lumber, did they?
A. Boats, yes, sailing vessel called the Pierpont.
Q. The Pierpont came up there and got lumber?
A. Lumber.
Q. When did you first find out how the boats ran when they went up there?
A. Well, when I first noticed that boat come up, that sail vessel.
Q. The Pierpont.
A. The Pierpont.
Q. Did other boats come up there?
A. Not that I know of. Them days boats was very scarce. There was no steamers, no tugs.
1587 Q. Afterwards were there boats came up there?
A. After that vessel came there?
Q. Yes.
A. I don't know any other boat.
Q. You were there how long?
A. I worked there about three years.
Q. Did you ever run on boats up the St. Louis River?
A. Yes.
Q. When did you begin?
A. Right after I quit the mill.
Q. What boat did you run on?
A. The first one was the Tug Agate.
Q. How long did you run on the Tug Agate?
A. I guess pretty near one summer off and on. We didn't go all the time. We were hauling stone for Superior entry.
Q. What boat did you next run on?
A. With the Amethyst.
Q. Who was running the Amethyst?
A. Well, Alf Merritt was the captain and Martin Wheeler was the engineer.
Q. Was Martin Wheeler afterwards captain?
A. After.
Q. You ran when Martin Wheeler ran on there as captain?

A. No; I don't think he was captain. I guess he was the engineer.

Q. And how long did you run on the Amethyst?

A. Well, one season. I don't know but what we were more. I guess the Agate didn't finish the first season. I guess the Amethyst came up.

Q. And finished up the season?

A. Yes.

Q. Then did you run on the Amethyst the next season.

A. Yes.

Q. Did you run on the Amethyst any more?

A. No.

Q. Did you run on the Amethyst any more than one season and part of another season?

A. No.

1588 Q. Did you run on any other boats?

A. Yes. I ran on another little boat. After they got through hauling stone I went with the railroad company, the St. Paul and Duluth Company. They had a little boat, and a yacht called the E. C. Key.

Q. How long did you run on that boat?

A. A couple of years.

Q. What did you do on that boat?

A. I was deck hand.

Q. What did you do on the Amethyst?

A. On the Amethyst I didn't belong there. I belonged on the scow. I was — the fore front of the scow; but when the scow was loaded or unloaded going up the river most of the time I was on the tug, ahead with the boys on the tug.

Q. Did you hold the wheel sometimes?

A. Yes; I held the wheel pretty near all the time when I was on the tug; that's what I would do, take the wheel.

Q. And also on the Amethyst when Martin Wheeler was on it?

A. I don't remember if it was Martin Wheeler. I think he did the fore part of the second season I was hauling rock.

Q. Where were you hauling these rocks to?

A. From Fond du Lac, that stone quarry above the meadow there, and pull it to the Superior entry when they built them first wooden piers at the Superior entry.

Q. The rock were hauled on scows?

A. On scows.

Q. And towed by the Tug Amethyst?

A. Tug Amethyst.

Q. How many scows did the Tug Amethyst use to tow?

A. Four scows. They were small scows them days.

Q. Sometimes four?

A. Most of the time it was four scows. Once in a while one would be out of repair and it would be three.

1589 Q. Sometimes only two?

A. No, I don't believe took but two.

Q. Think you most always had three?
A. Three or four.
Q. You were foreman on the scow?
A. Foreman on the scow.
Q. What did you do on the scow?
A. I wheeled stone to the scow and piled it.
Q. Then when you were coming down the river you rode on the boat, you say, or the tug?
A. The most of the time. Sometimes I stayed on the scow but the most of the time I could get on the tug.
Q. And you say the most of the time you steered?
A. Steered, yes.
Q. Now what course did the boats take above Grassy Point there?
A. After you come around the Grassy Point when we were going up towards up the river, get around the corner of the Grassy Point, close to the south, close to the Wisconsin side, the channel was very close to the shore.
Q. That is, as you came around the point?
A. Yes.
Q. Then after you rounded the point where did you go?
A. We would go up towards the north, up towards Millford.
Q. Close to the Minnesota shore or not?
A. Minnesota shore.
Q. And passed that dock on the channel?
A. Passed the dock sure.
Q. Millford dock?
A. Millford dock; passed close to the dock and keep on going further up, keep the north shore pretty near up to the upper end of that Big Island; we used to call it Hugier's Island.
Q. What is that channel called?
1590 A. I don't know the real name. It's called the channel.
Q. It's called the channel?
A. It was the channel; that they say.
Q. Do you know how deep water was in it?
A. No, not exactly, but it was pretty fair channel.
Q. About how deep was the water?
A. Well, I don't know, but then, anyway, to be sure, it was not less than may be 12 feet and more.
Q. Twelve feet and more?
A. More water. Twelve, 14, 15, and some place would be 18 feet, for all I know.
Q. Did you pull a crib down from Millford to the entry?
A. Yes, sir.
Q. When was that?
A. That was during the time I was working for the mill. That is the time I worked there, three years. I believe that was the second summer I was working in the mill. They started to build that Superior entry pier, and the lumber was sawed there, timber was sawed there at that Millford mill.
Q. For the crib?
A. For the crib.

Q. Crib was built there?

A. Not all. They built it at the entry. They found out it was too much to tow. It was an awful hard thing to tow. We had to pole. Walk on each side, four or five men on each side would pole and we poled her.

Q. How did you get down from Millford?

A. North shore; we took that channel there by Millford.

Q. That deep water channel ?

A. That deep water channel.

Q. When you were running with Martin Wheeler did you run in that channel?

A. Yes, sir.

1591 Q. Did you sometimes take the cut-off?

A. Yes.

Q. When?

A. Not often. That was pretty hard.

Q. When?

A. During that time we were hauling rock.

Q. When would you take the cut-off and when would you go around the main channel?

A. When we would take the short-cut that was the time when it would be northeast wind. It would raise the water. The water would be a little higher. We would take the short-cut if we came down and strike that Elbow in the daytime. Dark, we couldn't make it in the dark. When we would leave Fond du Lac late in the day we followed the main channel by Millford and by Grassy Point.

Q. Did the boats that you were on take the same channel when they went north of the island that boats took when they came up to Millford to get lumber?

A. Yes.

Q. Same channel?

A. Same channel.

Q. Did you sometimes stop at the Millford dock?

A. Well, we did stop, not often, but we did stop to get some slabs, some fuel, fire up; them days they had no coal, fire it with cord wood and slabs most of the time.

Q. Was that dock on the channel that you usually took when you went up the river and came down with scows?

A. Yes, sir, right on the edge of the channel.

Q. When you pulled the raft down, I mean the crib, did you come down the main channel?

A. Yes, sir.

Q. How much water did that raft draw?

A. I don't know. I don't remember exactly; but somewheres about 8 feet, I should think. I believe it was 12 layers of 10-inch timber.

1592 Q. How many of them stuck up above the water?

A. Oh, about two layers or two and a half. I wouldn't be able to say for certain, exactly. I didn't pay much attention that

day, but I know it was out of the water. I guess it must be two layers of timber, two feet or may be a little more out of the water.

Q. What channel did boats that went up the river usually take above Grassy Point?

A. The north channel by the north shore, follow the Grassy Point through, then make a turn and pass in front of Millford close to that little lumber dock.

Q. That's out on the channel?

A. That's out on the channel.

Q. How old are you?

A. I am 79 past. I will be 80 in March.

Q. Is your eyesight good?

A. Not very good now. Pretty weak. Can see to handle myself all right in the daytime but as soon as it is dark I have got to feel around quite a bit.

Cross-examination:

By Mr. Bailey:

Q. Were there just two channels that you used to go, just two that you used to go up the river, the one the cut-off and the other the channel that you have described?

A. Well, the north was called the channel and the other was called the cut-off.

Q. Was there just two ways?

A. Just two ways; that is all.

Q. And if you were going the cut-off you always went the same course, that is, if you were going the cut-off you always took one course, did you?

A. What do you mean, one course? To steer?

Q. I mean just along the same route?

A. Just the same route.

Q. And if you were going through up north of Big Island
1593 you always took the other course?

A. Yes, sir.

Q. And it was always the same?

A. Always the same.

Q. Now, how wide was it; how wide between the reeds there, the course that you took as you went just after you got around Grassy Point?

A. How wide was the channel?

Q. Yes. Between the reeds and grass and stuff how wide was it?

A. Well some places wider than others; oh, I guess on an average—I recollect in front of the Millford dock there I should judge it was a hundred and twenty feet, probably a hundred and fifty feet, may be a hundred and twenty-five.

Q. May be two hundred?

A. Well, may be, but I don't hardly think it would be that wide. The rushes show out of the water.

Q. Just as you got around Grassy Point would you head almost straight for Millford?

A. No, sir. We would head the other way.

Q. Would you head straight for Millford if you were going the cut-off?

A. Oh, no. The cut-off would be the other side; we wouldn't head for Millford at all.

Q. Didn't you go up towards Millford when you went the cut-off?

A. No.

Q. Not towards Millford at all?

A. We got near Millford, went here, them two channel- was quite a distance apart. Big Island was between them two channels.

Q. Big Island was between the two channels?

A. Yes, this way they called the cut-off when you pass on the south shore, that Elbow, we used to call it there, that was Wisconsin side; and the other channel was away north towards Millford.

1594 Q. Have you ever looked at any of these maps here?

A. I don't know nothing about maps.

Q. Can you see?

A. They show me. This gentlemen, I guess.

Q. Mr. Gard?

A. Showed me the map. But I can't read and I never looked at map. Another thing now, I wouldn't be able to see the figures. I never know anything about the map.

Q. But you can't read, anyway?

A. No. I am one of the kind I never seen a school-house until I growed up to be a man.

Q. So you don't know anything at all about maps?

A. No.

Q. You never had any maps on these tugs you were working on?

A. Not that I remember.

Q. Did you ever know about a little island out there called Pancake Island or Snowshoe Island?

A. On the lower end of Big Island, between Grassy Point and the Big Island. that little island was closer to the island.

Q. The Big Island?

A. Yes.

Q. Than what?

A. Closer than it is to Grassy Point.

Q. How close was it to Big Island?

A. Oh, I don't know; it ain't very far.

Q. A hundred and fifty feet?

A. Yes, more than that I suppose.

Q. Two hundred?

A. Well, probably.

Q. How far was it from Grassy Point?

A. Half a mile or three quarters of a mile.

Q. About 200 feet from Big Island and half or three-quarters of a mile from Grassy Point?

A. I wouldn't be able to testify the exact distance but I
1595 know there is a small island on this side of Big Island.

Q. That is the only island you know about between that and Big Island?

A. The rushes grew two feet above the water.

Q. They grew all over the bay up there?

A. All over the bay?

Q. Most of the time you went up there it was with Martin Wheeler or Alfred Merritt?

A. Yes.

Q. They were captains?

A. Yes, sir.

Q. And you were deck hand on the scows or foreman of the scow?

A. Foreman of the scow.

Q. So you didn't have anything to do with navigation except when you were going back up the bay and took the wheel?

A. Going back and forth I used to take the wheel most of the time.

Q. When you did anything you took the wheel?

A. Yes.

Q. But usually the wheelsman was tending to his job, wasn't he?

A. Yes, but he was helping the fireman, helping the engineer.

Q. He was right there to see where you were going?

A. Yes, sir.

Q. So whatever you did you did under his directions?

A. Under his directions.

Q. And you simply went where he told you to go?

A. Yes, sir.

Q. Was there any open water between this channel that you say you took around there up by Millford and the channel from the cut-off? Was that open water or was it all weeds in there?

A. All weeds.

Q. All covered over so there wasn't any open water?

A. Might be some few little spots where there wasn't any weeds.

Q. Of course, but there wasn't any width of open water there at all?

A. No, no.

1596 Q. So that the channel that you took in open water was the first channel next to the channel of the cut-off? That's right, isn't it?

A. Next to Grassy Point.

Q. I say you went up, we will say the cut-off here, that we will call the south channel?

A. Yes, sir.

Q. Now the next channel to the north of that was the one you went?

A. Yes, sir. That is the one. That was the right channel, the main one.

Q. And you always went that one?

A. I say, not always.

Q. Except when you went the cut-off?
A. Yes.
Q. Now what draft did the Agate have?
A. I don't remember exactly.
Q. Well, about?
A. Well, I should judge it was a small tug about seven feet or may be seven and a half; I don't know exactly.
Q. What did the Amethyst have?
A. That is the one.
Q. I asked you about the Agate first?
A. I guess they wasn't far apart for drawing water. I guess they are pretty near the same depth of water. The Agate was smaller built, a good deal shorter. The Amethyst was broad and showed up bigger but I guess it was pretty near the same so far as——
Q. Alfred Merritt and Martin Wheeler were good navigators, weren't they?
A. The most of them was captains.
Q. I say, they were good navigators?
A. They was supposed to be.
Q. So far as you know they were?
A. Yes.
Q. What years was it that you ran up there?
A. I can't remember the year.
1597 Q. You say, you think it's about 49 years ago?
A. Well, somewheres about that.
Q. That's as near as you can remember?
A. Forty-eight, somewhere along there; I don't remember the year.
Q. Merritt and Wheeler were about the only captains that were running up there at that time, weren't they?
A. I think, as far as I know, I guess that was the only ones that was go- up the river; only man that had to go up, had any business up the river.
Q. Do you know Captain Ben Howard?
A. Ben Howard, yes.
Q. He was going up there, wasn't he?
A. Not them days.
Q. So that Merritt and Wheeler were the only ones?
A. Only ones.
Q. In the days when you were there?
A. We had another captain. Let's see. DeWitt McManus, but he wasn't long.
Q. You don't know where he is?
A. I don't know where he is. I haven't seen him since.
Q. Dead, probably?
A. Dead, so far as I know.
Q. You haven't heard of him recent years?
A. No.
Q. And he was only there for a very short time?
A. Very short time.

Q. So Howard didn't come there until after you quit working on the boats?

A. He may have worked up there some; I don't know.

Q. How much draft did this D. C. Key have that ran up there?

A. Small boat.

Q. How much draft?

A. I don't know. About 4 feet.

Q. And you ran that some of the time?

1598 A. Yes. I worked there two seasons for the railroad company, St. Paul and Duluth Company.

Q. You could go anywhere on the bay with that?

A. We used to go anywhere.

Q. You didn't pay any particular attention to the channel?

A. We had to pay attention to one channel or another. We couldn't run her over them rushes.

Q. You could go anywhere except where the rushes—when the rushes were up you had to go where the rushes were not?

A. In the spring of the year the ice breaks them off and they grow up after the ice has gone.

Q. Where do you live now?

A. In Duluth.

Q. How long have you lived there?

A. I was away from Duluth for a number of years. I was away once. I was down to Ashland, Wisconsin.

Q. Lived there ever since except for those ten years?

A. Seven years ago I went to the copper country, to Hancock, Michigan. I was there four years and I am back three years.

Q. What did you do in Duluth after you were on these tugs; what was your business after you got off of the tug; what did you do in Duluth?

A. Oh, I went to work in the St. Paul & Duluth warehouse, merchandise shed.

Q. How long did you work there?

A. I believe I worked there 17 or 18 seasons.

Q. After that what did you do when you got out of the warehouse?

A. I went watching.

Q. For who?

A. For the company.

1599 Q. St. Paul & Duluth?

A. Yes, sir.

Q. How long did you work at that?

A. I was watchman at the outside shed.

Q. How long?

A. I was watchman there I guess two years. I was watchman there and then when they done away with that house they built that one there behind the Spalding, they removed me there. I was flagman after that for the new crossing. I was there three years flagman on that Fifth Avenue crossing near the Union Depot.

Q. Then they removed you?

A. Well, yes, they removed me.

Q. What did they do with you?
A. They gave me my time and paid me.
Q. Then what did you do?
A. Nothing. I haven't done anything since.
Q. How long ago was that?
A. Oh, it's 23 or 4 years ago.
Q. So you haven't done anything for 23 or 4 years?
A. Somewheres about that.
Q. How do you live?
A. The best way I can.
Q. Do you live with some relative?
A. Well, I live with one of my sons now. I did work but I made a little money.
Q. Copper?
A. No. Well, I did make a few dollars on iron stock but not much.
Q. But you haven't done any work to speak of since you were 55 or 56 years old?
A. Somewheres about that.
Q. Of course, you don't claim to be a tug man or navigator?
A. No.
1600 Q. The work that you had on the water was just as foreman of a scow?
A. Just foreman of a scow.
Q. And you only took the wheel once in a while?
A. Once in a while, to help them along.
Q. You always knew Martin Wheeler to be a perfectly honest man, didn't you?
A. Yes.
Q. Depended on his word?
A. Yes, but——
Q. And he would know where he went?
A. Them times that man didn't know very much about it. That day anybody, practically, they know the river; they know the channel; but they wasn't much of an engineer; and Merritt wasn't much of a captain, either.
Q. You think you were better?
A. No. I wouldn't say I was better.
Q. You think you were better than they were?
A. No, sir, I don't think any such a thing.
Q. What you mean was that they weren't the kind that could handle a great big steam-ship such as they do nowadays?
A. Yes. They were just common men that knew the river; they could handle the wheel; they could follow the channel.
Q. They had to know where to go just as well as they do nowadays if they didn't want to get on the bars. What you mean is that they weren't navigators such as went on the lake?
A. No.

By Mr. Fryberger:

Q. Who asked you to come here and talk?

A. Mr. Bardon.
Q. John Bardon?
A. John Bardon.
Q. How long have you known John?
1601 A. I know him when he was a boy that high (indicating).
Q. That is about three feet high. You have known him since he was about three feet high?
A. Yes, sir.
Q. Pretty friendly with John?
A. Always been a good friend. I know him and I know his brother Jim and I know his brother Tom.
Q. You know Tom and Jim both?
A. I know them all well.

Redirect examination.

By Mr. Gard:

Q. You spoke of taking the channel next to the cut-off channel. How many channels were there above Grassy Point?
A. There is only two, if you call the short-cut a channel.
Q. That's what you mean, then, that there is just two channels there?
A. Yes.
Q. The cut-off, and the other one. What do you call that?
A. I should call that the main channel; whether I am mistaken or not, but that's what I should call it.
Q. Now you said the Key could go anywhere?
A. Pretty near anywhere.
Q. In going up the river did you take some channel?
A. Oh, we followed one or the other, the main channel or the cut-off.
Q. Why did you follow the main channel?
A. Because there wasn't water enough. You were liable to get aground most anywhere.
Q. Did the weeds mark the main channel there?
A. Yes, sir.
Q. By "weeds" we mean rushes or reeds?
A. The rushes was on each side, the grass, the rushes; it was very shallow water.

1602 Recross-examination.

By Mr. Fryberger:

Q. Now in the early days when you were up at Millford the boats that got lumber at Millford all went up the Millford channel, didn't they?
A. Yes, sir.
Q. And stopped there at the dock?
A. And stopped there at the dock.

Q. And then came back down to Grassy Point?
A. Came back.
Q. There was plenty of water up that far?
A. Yes, sir.
Q. And this crib that you towed down was built at Millford, wasn't it?
A. Yes, sir.
Q. And simply towed down to Grassy Point and over to the entry?
A. Yes, sir.

Wisconsin Rests.
Minnesota Rests.
Testimony Closed.

1603 In United States Supreme Court.

MINNESOTA

vs.

WISCONSIN.

SUNDRY WISCONSIN EXHIBITS. D. E. Roberts, Commissioner.

In the Supreme Court of the United States, October Term, 1916.

Number 24, Original.

In Equity.

STATE OF MINNESOTA, Plaintiff,

vs.

STATE OF WISCONSIN, Defendant.

Whereas the State of Wisconsin introduced in evidence before Honorable D. E. Roberts, commissioner appointed to take testimony herein, a certified copy of a letter written by the chief of engineers stationed at Duluth, Minnesota, to the Governor of the State of Minnesota, which certified copy of such letter was marked as Exhibit Number 17; and

Whereas, since the closing of the taking of the testimony herein said exhibit has been lost, and Exhibit Number 16½, being a certified copy of a letter written by the said chief of engineers stationed at Duluth, Minnesota, to the Governor of Wisconsin, which exhibit has been preserved and appears in the testimony,

Now therefore, it is hereby stipulated and agreed by and between the attorneys of the respective parties hereto that Exhibit Number 17, which was so introduced on the part of the State of Wis-
1604 consin, but which is now lost, was identical with Exhibit Number 16½, except that Exhibit Number 17 was addressed

to the Governor of the State of Minnesota, instead of to the Governor of the State of Wisconsin.

It is further stipulated that this stipulation may be inserted in the record in lieu of said Exhibit Number 17, and in the same place in the record where Exhibit Number 17 would naturally appear.

LYNDON A. SMITH,
Attorney General of the State of Minnesota.
WALTER C. OWEN,
Attorney General of the State of Wisconsin.

December 8, 1917.

In the Supreme Court of the United States. October Term, 1916, No. 24, Original. In Equity. State of Minnesota, Plaintiff, vs. State of Wisconsin, Defendant. Stipulation.

1605 Wis. Ex. 6.

Field Notes of the Survey of the Subdivision and Meander Lines of an Island in Section 19 *in Township No.* 49 *North Range* 14 *West of the 4th Principle Meridian,*

In the State of Wisconsin, as Surveyed by George R. Stuntz, U. S. Deputy Surveyor,

Under Special Instructions from Com. of U. S. Land Office, Dated August 7th, 1893,

Survey Commenced August 14th, 1893; Survey Completed August 16, 1893.

1606 *Preliminary Oaths of Assistants.*

We, William Fawcett & Jas. A. Jennings, do solemnly swear that we will well and faithfully execute the duties of Chain Carriers; that we will level the chain over even or uneven ground, and plumb the tally pins either by sticking or drop-ing the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill, and ability, and in accordance with instructions given us in the survey of the subdivision and meander lines of a certain island in Section 19 in Township No. 49 North, of Range No. 14 West of the 4th Principle Meridian, in the State of Wisconsin.

WILLIAM FAWCETT,
Chainman.
JAS. A. JENNINGS,
Chainman.

Subscribed and sworn to before me this 14th day of August, 1893.
[SEAL.] AUSTIN N. McGINDLEY,
Notary Public, St. Louis Co., Minn.

1607 I, T. R. Armstrong, do solemnly swear that *e* will well and truly perform the duties of Axemen in the establishment of corners and other duties, according to the instructions given *us*, and to the best of *our* skill and ability, in the survey of the subdivision and meander lines of a certain Island in Section 19 in Township No. 49, North, of Range No. 14 West of the — Principal Meridian, in the State of Wisconsin.

T. R. ARMSTRONG,
Axeman.

Subscribed and sworn to before me this 14th day of August, 1893.
[SEAL.] AUSTIN N. McGINDLEY,
Notary Public, St. Louis Co., Minn.

#58111.

Rec'd with letter from Geo. R. Stuntz, dated Sept. 11, 1893.

96747

1893

A copy of these notes will be found in a book filed in case in basement in file case containing notes of Island Surveys.

1608 STATE OF MINNESOTA,
St. Louis County, City of Duluth, ss:

I, George R. Stuntz, do solemnly swear that I will support and defend the Constitution of the United States against all enemies foreign and domestic; that I will bear true faith and allegiance to the same; that I take this obligation freely and without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the Duties of United States Deputy Surveyor in the survey of a certain island in the St. Louis River situated in Sec. 19 in Township 49 North of Range No. 14 West of the 4th Principal Meridian, in Douglas County, Wisconsin, So help me God.

GEORGE R. STUNTZ.

Subscribed and sworn to before me this 14th day of August, 1893.
[SEAL.] AUSTIN N. McGINDLEY,
Notary Public, St. Louis Co., Minn.

STATE OF MINNESOTA,
County of St. Louis, ss:

I, D. J. Sinclair, Clerk of the District Court, for the County of St. Louis, which is a court of record having a seal, Do hereby certify, that Austin N. McGindley, the person before whom the foregoing oath was taken was, on the 14th day of August,
1609 1893, therein mentioned, a Notary Public in and for said County, duly authorized to take the same, that I am well

acquainted with the handwriting of the said Austin N. McGindley, and verily believe that the name of the said officer, subscribed to the said certificate, is his genuine signature.

In testimony whereof, I have hereunto set my hand and affixed the seal of said Court at Duluth, this 14th day of August, A. D. 1893.

[SEAL.] D. J. SINCLAIR,
Clerk.

Per F. R. MILLAR,
Deputy Clerk.

1610 Township 49 N., Range No. 14 W., 4 M., Wis.

Survey of an Island in Section No. 19.

Survey Commenced August 14th, 1893. Survey Completed August 16th, 1893.

To commence the survey I went to the corner of Sections 19, 24, 25 and 30 on the Range Line, the west boundary of the township.

The post at this corner had *a* long since rotted down.

The pine tree described in the field notes furnished me by your office is alive and has grown from 13 inches in diameter in 1853 to 28 in. in diameter and the lettering T. 49 N.,—R. 14 W. S. 30 B. T. is as distinct as the day it was written.

I set my instrument; an engineering transit six inch needle.

Variation 10° 30′ East at this tree and turned off the angle N. 4 W. and measured 17 links distant and set a post 4 x 4 in. square five feet long firmly in the ground; lettered T. 49 N. R. 14 W. S. 19 on northeast face and T. 49 N.-R. 14 W. S. 30, on S. E. face. T. 49 N. R. 15 W. S. 25 on S. W. and T. 49 N. R. 15 W. S. 24 on N. W. and cut 2 notches on the south corner and 4 notches on the north corner.

Then I measured N. 52° E. 33 links distant to a birch tree now 12 inches in diameter and found the letters T. 49 N. R. 14 W. S. 19 B. T. well preserved and distinct.

I then measured S. 87° W. 87 links distant to a birch stump that had been cut down quite recently near the ground. This
1611 was evidently the tree described in the field notes. I also measured N. 64° W.

Chs. Lks.

2.88 links distant to another birch stump cut close to the ground, and concluded that this had been the bearing tree.

I then marked two new bearing trees, a spruce 6 in. in diameter brs. 22° W. 16 links distant and marked T. 49 N.—R. 15 W. S. 25 B. T. and a birch 6 in. in diam. brs. No. 62° W. 49 links distant and marked T. 49 N. R. 15 W. S. 24 B. T.

I now run north on the range line setween sections 19 and 24.

Variation, 10° 30′ East.

10.00 Enter a marsh the margin bears N. W.
11.00 Set up long flag-ed picket for south end of a base to triangulate from.
31.50 Intersect the St. Louis River and set a post 4 x 4 in. sqr. five feet long firmly in the marsh for meander corner and marked S. 49 n. r. 14 w. s. 19 m. c. on east fan and t. 49 n. r. 15 w. s. 24 m. c. on west fan and set up a tall flaged picket at this post for north end of the base.

Length of base line 2050 links n. cedar tree 10 in. in diameter brs. s. 0° 5′ w. 21.42 chs. distant and marked t. 49 n. r. 15 w. s. 24 b. t. The Original bearing trees are gone and are not to be found.

Marsh—slightly submerged by a recent raise in the water of Lake Superior.

South of marsh thickly timbered with fir birch
1612 aspen and spruce.

Dens- undergrowth of alders fir hazel and young birch and aspen.

I now go to the island to be meandered and set a post on the south side thereof 4 x 4 in. square 6 feet long firmly in the ground for meander corner and marked t. 49 n. r. 14 w. s. 19 m. on two sides.

On examination I find that the shores of this island are so marshy and full of bog holes that it is impracticable to measure with a chain. I therefore ran a base line from the meander corner on the south side of the Island north.

Variation, 10° 3′ East.

Chs. Lks.
9.00 To the north side of the island at the water line. I then set a picket at the northwesterly extremity of the island, another at the southwesterly extremity of the island, and 4 more pickets No. from 1 to 4 from the north end of the base at points around the E. end of Isl. I now go to the meander corner on the south-side of the island set up my instrument and take the following angles.

V., 10° 30′ East.

Chs. Lks. Course. Distance.	
S. 50° 30′ W.	South end of base on range line.
S. 65° W.	North end of base on range line Dist. 59.12 chs.
S. 88° 30′ W.	Picket at southwesterly extremity of Island.
N. 65° W.	Picket at northwesterly extremity " "
North	North end of base on small island.
N. 13° E.	1st Picket.
N. 30° E.	2 "
N. 40 E.	3 "

1613

N. 52° 30′ E.	4 "
N. 19° W.	House (S. E. cor.) I now go to the north end of base on the small island, set up my instrument and take the following angles.

V., 10° 30′ East.

N. 49½° E.	Picket No. 1.
N. 72° E.	No. 2.
N. 86½° E.	No. 3.
S. 57½° E.	No. 4.
S. 50° W.	S. E. Corner of J. Armstrong's house, from south end of this base. The S. W. end of this rush bed bears S. 73° W.
S. 45° W.	South end of base on range line.
S. 58½° W.	North End of base on range line.

1614

Angles taken from north end of base on Island continued.

Variation, 10° 30′ E.

Course.	Chs. Lks. Distance.	
S. 50° W.		Most westerly point of rush bed.
S. 65° W.		Most westerly point of island. I now go across the St. Louis River to a station established on a point of land by the U. sts. Harbor Engineers and situated in that part of the city of Duluth known as West Duluth a few hundred feet southwesterly from the blast furnace, A gas pipe 2½ in. x 1½ ft. long driven down for monument. Var., 10° 30′ E.
S. 36½° W.		N. end of base line on big island on the range line.
S. 26° 45′ W.		South end of base line on big island.
S. 6° W.		To west end of small island.
S. 22° 0′ E.		To east end of small island.
S. 14° 45′ W.		To the most westerly point of rush bed. The Harbor Engineers have driven a line of piles to guide the dredge in deepening the channel and have numbered these piles. The most easterly one is numbered.
S. 22° 0′ E.		No. 1 I now take a bearing to these piles.
S. 5° E.		No. 2 The dredge is now at work.
S. 4° W.		No. 3 at this point.
S. 9° 30′ W.		No. 4 I now go to a point of land farther to the southwest in West Duluth and set up my instrument and take the following bearings. A house stands 50 feet west of this point.

V., 10° 30′ E.

1615

N. 88° E.	No. 1 pile.
S. 86° 30′ E.	No. 2 "
S. 89° E.	No. 3 "
S. 67° 30′ E.	No. 4 "
S. 71° E.	East end of Island.
S. 54° E.	House on island S. E. cor.
S. 41° E.	West end of Island 'N westerly angle).
S. 20° 30′ W.	S. end of base on range line.
S. 28° 30′ W.	North end of base on range line.

Survey of Island Continued.

Course. Dist. Chs. Lks.

Having completed a description of my operations in the field I now proceed to give the meander lines of the island and the adjacent rush bed—instrumentally.

Beginning at the meander corner on the south side of the Island.

Variation, 10° 30′ E.

N. 52½ E.	8.10	
N. 18° E.	4.80	
N. 43¼ W.	2.20	shores low and marshy.
N. 88¾° W.	3.85	
S. 50° W.	3.40	to picket at north end of base.
S. 65° W.	10.74	To picket at northwesterly angle if island.
S. 24¼° E.	5.32	To southwesterly picket.
N. 88½ E.	7.45	To place of beginning.

Containing 11.91 acres.

This island is marshy and has a few small Tamarac trees, and picket of alders, willows and other shrubbery intermixed with rushes flags and water grapes. It is virtually on the lake level and cannot be drained.

1616

I now proceed to meander the rush bed adjoining the southwest part of the Island and is a part of the island so far as navigation is concerned.

Beginning at the most westerly angle of the island, thence

S. 50° W.	8.00	
S. 26½° W.	5.65	To S. W. point of Rush bed—water 2 ft. deep.
East	2.00	Sandy bottom.
N. 50° E.	5.82	
N. 70° E.	4.80	To southersterly point of island.

The water around the margin of this rush bed is from one to two feet deep.

Two years ago during very low water in Lake Superior it was out of water, a muddy sand bank, now there is a growth of bull rushes. This marshy bed contains 4.19 acres.

Accompanying this report I send you a map on tracing linnen showing the adjacent shores in both the state of Wisconsin and Minnesota.

With the slightly imperfect instruments at my command I have made it as perfect as I could.

The question of this island is not so easily answered.

Township 49 North of Range 14 West in Wisconsin comprising
1 to four easterly tier of sections is nearly all platted and is being
rapidly improved.

1617 Tower avenue runs south through the town between sections 15 & 16, 21 & 22, 27 & 28 in West Superior and is improved that far.

Extensive railroad tracks and yards of several important railroads occupy a belt to the west of this Avenue.

An extensive street plant is located on the SW ¼ Section 16 and has been operated.

Extensive coal docks elevators and mills are located to the west of Tower Avenue on the Bay of St. Louis.

On the Minnesota side of the River in Town 49, Range 14 that part of the city called West Duluth is situated covering all of fractional section 18 a part of Sections 12 and 13 in Range 15—and on Sections 5, 6, 7, 8, and 17 in T. 49 N. R. 14 West. An iron dock has just been completed on sections 5 and 8 and extending in to the Bay of St. Louis over 2,000 feet. The largest iron dock in the world. Extensive mills on Grassy Point on Section 17 and 18. A blast furnace and car works on 18 factories and large steel works farther west in Range 15—

and if this progress is continued for ten years to come as in the past ten years, it will reach many of the numerous commercial points on the river and its island.

By a judicious system of ships and wharves the St. Louis River and adjacent bays inlets and marshes five hundred miles of wharfage can be made available; between the mouth of the river
1618 and Fondulack the head of navigation. By the main channel the distance is about twenty miles.

In time this island may become available for commercial purposes. It would cost at present from twelve to fifteen hundred dollars per acre to grade it up so that it could be occupied for any purpose.

The level of the water in Lake Superior fluctuates between the minimum and maximum between 3 and 4½ feet. Severe winds holding in one direction for several days change these figures considerably. The east channel of the St. Louis River will of necessity be maintained and improved as it affords an entrance to all bays above Grassy Point.

The distance from the meander corner on the range line at the bank of the St. Louis River and north end of my base line is 60.00 chains to the meander corner on the south side of the island.

The only improvement on the island is small plank house in an unfinished condition. It cost probably seventy-five dollars. This house belongs to John Armstrong. He tells me that he had a house on the island that cost him about two hundred dollars and that it was burned down and this building was to be completed this fall.

GEORGE R. STUNTZ,
U. S. Deputy Surveyor.

1619 *Final Oath of Assistants.*

We hereby certify that we assisted George R. Stuntz, U. S. Deputy Surveyor, in surveying all those parts or portions of the subdivision and meander lines of *of* an island in Section 19, in Township No. 49 North of Range 14 West of the 4th Principal Meridian, in the State of Minnesota, as represented in the foregoing field notes as having been surveyed by him and under his directions; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the U. S. Surveyor General for Minnesota.

WILLIAM FAWCETT,
Chainman.

JAS. A. JENNINGS,
Chainman.

T. R. ARMSTRONG,
Axeman.

Subscribed and sworn to before me this 15th day of August, 1893.

[SEAL.] AUSTIN N. McGINDLEY,
Notary Public, St. Louis Co., Minn.

STATE OF MINNESOTA,
County of St. Louis, ss:

I, D. J. Sinclair, Clerk of the District Court, for the County of St. Louis, which is a court of record having a seal, Do hereby certify, that Austin N. McGindley, the person before whom the foregoing acknowledgement was taken, was, on the fifteenth day of August 1893, therein mentioned, a notary public in and for said county, duly authorized to take the same; that I am well acquainted with the hand writing of the said Austin N. McGindley, and verily believe that the name of the said officer, subscribed to the
1620 said certificate is his genuine signature.

In testimony whereof I have hereunto set my hand and affixed the seal of said Court at Duluth, this 28th day of August A. D. 1893.

D. J. SINCLAIR,
Clerk.

[SEAL.] Per G. C. WOODSIDE,
Deputy Clerk.

List of Names.

A list of names of the individuals employed by —— ——, U. S. Deputy Surveyor, to assist in running, measuring and marking the lines and corners described in the foregoing field notes of the survey of the Subdivision and meander lines of township No. —— North, of Range No. —— West of the —— Principal Meridian, in the State of Minnesota, showing the respective capacities in which they acted.

WILLIAM FAWCETT,
Chainman.
JAS. A. JENNINGS,
Chainman.
—— ——,
Axeman.
T. R. ARMSTRONG,
Axeman.

1621 *Final Oath of Deputy.*

I, George R. Stuntz, U. S. Deputy Surveyor, do solemnly swear that in pursuance of a letter of instructions and the appointment as Deptuy U. S. Surveyor received from S. W. Lamoreaux, Commissioner of the General Land Office of the United States, bearing date August 7th 1893.

I have well, faithfully and truly and in my proper person and in strick conformity with the instructions furnished by the said Commissioner of the General land office, the Manual of Surveying, Instructions and the laws of the United States surveyed an island situated in the waters of the St. Louis River in section 19 Township No. 49, North of Range 14, west of the 4th Principal Meridian in Douglas County, Wisconsin, as are represented in the foregoing field notes as having been surveyed by me and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strick accordance with the surveying manual, printed instructions, the special written instructions of the Said Commissioner of the U. S. General Land Office and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey, and should any fraud be detected I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8th, 1846.

GEORGE R. STUNTZ,
U. S. Deputy Surveyor.

Subscribed and sworn to before me this 16th day of September, 1893.

[SEAL.] D. J. SINCLAIR,
Clerk.

1622 A. W. B. C. H. F.

Department of the Interior, General Land Office.

WASHINGTON, D. C., Feb. 26, 1894.

The foregoing field noted of the survey of an island in the St. Louis River, in Sec. 19, Tp. 49 N., R. 14 W., 4th principal meridian, Wisconsin, executed by George R. Stuntz, Ds., under his special instructions from the Commissioner of the General Land Office, dated August 7th, 1893, having been critically examined and the necessary corrections and explanations made, the said field notes and the surveys they describe are hereby approved.

S. W. LAMOREAUX,
Commissioner and ex-Officio Surveyor General of Wisconsin.

1623 UNITED STATES OF AMERICA:

The State of Wisconsin, Department of Public Lands.

To all to whom these presents shall come:

I, W. H. Bennett, Chief Clerk of the Wisconsin State Land Office do hereby certify that the foregoing copy of the field notes of the original government survey of an island in the St. Louis River, in Section 19, Town 49 North, Range 14 West, in the State of Wisconsin, has been compared with the original field notes on file in the office of the Commissioners of Public Lands of the State of Wisconsin, and that the same is a true copy thereof, and of the whole of such original field notes.

In testimony whereof, I have hereunto set my hand and affixed the official seal of the Commissioners of the Public Lands at the Capitol, in the City of Madison, this 4th day of August, A. D. 1917.

[SEAL.] W. H. BENNETT,
Chief Clerk of the Wisconsin State Land Office.

1624 UNITED STATES OF AMERICA:

The States of Wisconsin, Department of State.

To all to whom these presents shall come, Greetings:

I, Merlin Hull, Secretary of the State of Wisconsin, and Keeper of the Great Seal thereof, do certify that W. H. Bennett, Esquire, whose name appears subscribed to the annexed attestation, which attestation is in due form, was at the date thereof Chief Clerk of the Wisconsin State Land Office, authorized and empowered by law to certify to the records thereof.

I further certify that to all acts by him so done full faith and credit are and ought to be given in Judicature and thereout.

In testimony whereof I have hereunto set my hand and affixed the Great Seal of the State at the Capitol in the City of Madison, this — August, A. D. 1917.

[SEAL.] L. B. NAGLER,
Assistant Secretary of the State of Wisconsin.

1625 Wis. Ex. 9.

THE UNITED STATES OF AMERICA:

To all to whom these presents shall come, Greeting:

Whereas, by the Act of Congress approved September 28th, 1850, entitled "An Act to enable the State of Arkansas and other states to reclaim the 'swamp lands' within their limits" it is provided that all the "Swamp and Overflowed Lands," made unfit thereby for cultivation, within the State of Wisconsin which remain unsold at the passage of said Act, shall be granted to said State:

And whereas, in pursuance of instructions from the General Land Office of the United States the several tracts or parcels of land hereinafter described have been selected as "Swamp and Overflowed Lands," inuring to the said State under the Act aforesaid, situate in the District of lands subject to sale formerly at Bayfield now Ashland, Wisconsin, to wit:

Township 49 North of Range 15 West.

The lot numbered two of section twenty-four containing forty-eight acres according to Official Plats of Survey of the said lands returned to the General Land Office by the Surveyor General, and for which the Governor of the said State of Wisconsin has requested a patent to be issued to the said State, as required in the aforesaid Act.

Now therefore, Know Ye, that the United States of America, in consideration of the premises and in conformity with the Act of Congress aforesaid, have Given and Granted and by these presents do Give and Grant unto the said State of Wisconsin in fee simple subject to the disposal of the Legislature thereof, the tract of land above described.

To have and to hold the same, together with all the rights, privileges, immunities and appurtenances thereto belonging unto
1626 the said State of Wisconsin in fee simple and to its assigns forever.

In testimony whereof, I, Grover Cleveland, President of the United States of America have caused these letters to be made patent and the Seal of the General Land Office to be hereunto affixed.

Givn under my hand at the City of Washington, the tenth day of January in the year of out Lord one thousand eight hundred

and eighty-nine and of the Independence of the United States the one hundred thirteenth.

GROVER CLEVELAND.

By the President:

By M. M. McKERN,

[SEAL.] *Secretary.*

ROBIN ROSS,

Recorder of the General Land Office.

Recorded Vol. 2, P. 281.

1627 UNITED STATES OF AMERICA:

The State of Wisconsin, Department of State.

To all to whom these presents shall come, Greeting:

I, Merlin Hull, Secretary of the State of Wisconsin, and Keeper of the Great Seal thereof, do certify that W. H. Bennett, Esquire, whose name appears subscribed to the annexed attestation, which attestation is in due form, was at the date thereof Chief Clerk of the Wisconsin State Land Office, authorized and empowered by law to certify to the records thereof.

I further certify that to all acts by him so done full faith and credit are and ought to be given in Judicature and thereout.

In testimony whereof I have hereunto set my hand and affixed the Great Seal of the State at the Capitol, in the City of Madison, this — day of August, A. D. 1917.

[SEAL.] L. B. NAGLER,

Assistant Secretary of the State of Wisconsin.

1628 UNITED STATES OF AMERICA:

The State of Wisconsin, Department of Public Lands.

To all to whom these presents shall come:

I, W. H. Bennett, Chief Clerk of Wisconsin State Land Office, do hereby certify that the annexed copy of the original patent of the United States Government to the State of Wisconsin of the lands described therein has been by me compared with the original thereof on file in the office of the Commissioners of the Public Lands of the State of Wisconsin, and that the same is a true copy thereof, and the whole of such original patent.

In testimony whereof, I have hereunto set my hand and affixed the official seal of the Commissioners of the Public Lands at the Capitol, in the City of Madison, this 4th day of August, A. D. 1917.

[SEAL.] W. H. BENNETT,

Chief Clerk of Wisconsin State Land Office.

1629 Wis. Ex. 10.

No. 4.

THE UNITED STATES OF AMERICA:

To all to whom these presents shall come, Greeting:

Whereas, by the Act of Congress approved September 28, 1850, entitled "An Act to enable the state of Arkansas, and other states, to reclaim the 'swamp lands,' within their limits," it is provided that all the "Swamp and Overflowed Lands," made unfit thereby for cultivation, within the State of Wisconsin which remained unsold at the passage of said Act, shall be granted to said State:

And whereas, in pursuance of instructions from the General Land Office of the United States, the several tracts or parcels of land herein after described have been selected as "Swamp and Overflowed Lands," inuring to the said State under the Act aforesaid, situate in the District of lands subject to sale at Superior City, now Bayfield, Wisconsin, to wit:

Township Forty-two * * *

* * * * * * *

Township Forty-nine North of Range fifteen West the lot numbered three of section twenty-five containing twenty-five acres, and sixty-hundredths of an acre, and containing in the aggregate forty-five thousand one hundred and thirty-five acres and thirty-six hundredths of an acre according to the Official Plats of survey of the said lands returned to the General Land Office, by the Surveyor General, and for which the Governor of the said State of Wisconsin did, on the second day of May, one thousand eight hundred
1630 and seventy-one, request a patent to be issued to the said State as required in the aforesaid act.

Now, therefore, Know Ye that the United States of America in consideration of the premises and in conformity with the Act of Congress aforesaid, have given and granted and by these presents do give and grant unto the said State of Wisconsin in fee simple, subject to the disposal of the legislature thereof the tracts of land above described, to have and to hold the same together with all the rights, privileges, immunities, and appurtenances thereto belonging unto the said State of Wisconsin in fee simple, and to its assigns forever.

In testimony whereof, I, Ulysses S. Grant, President of the United States of America, have caused these letters to be made patent and the Seal of the General Land Office to be hereunto affixed.

Given under my hand at the City of Washington the 25th day of January, in the year of our Lord one thousand eight hundred and seventy-two and of the Independence of the United States, the ninety-sixth.

By the President: U. S. GRANT.

[SEAL.] By J. PARRISH,
Secretary.

C. B. BRYNTON,
Recorder of the General Land Office.

Recorded in Vol. 2, pages 157 to 164 inclusive.

1631 UNITED STATES OF AMERICA:

The State of Wisconsin, Department of Public Lands.

To all to whom these presents shall come:

I, W. H. Bennett, Chief Clerk of the Wisconsin State Land Office, do hereby certify that I have compared the annexed copy of that part of the original patent from the United States to the State of Wisconsin with the original thereof on file of record in the Office of the Commissioners of the Public Lands of the State of Wisconsin, and that the annexed is a true and correct copy of the said Patent, so far as it relates to lot numbered three of section twenty-five, in Township forty-nine north, range fifteen west, in the State of Wisconsin.

In testimony whereof, I have hereunto set my hand and affixed the official seal of the Commissioners of the Public Lands at the Capitol, in the City of Madison, this fourth day of August, A. D. 1917.

[SEAL.] W. H. BENNETT,
Chief Clerk of Wisconsin State Land Office.

1632 UNITED STATES OF AMERICA:

The State of Wisconsin, Department of State.

To all to whom these presents shall come, Greeting:

I, Merlin Hull, secretary of the State of Wisconsin, and Keeper of the Great Seal Thereof, Do Certify that W. H. Bennett, Esquire, whose name appears subscribed to the annexed attestation, which attestation is in due form, was at the date thereof Chief Clerk of the Wisconsin State Land Office, authorized and empowered by law to certify to the records thereof.

I further certify that to all acts by him so done full faith and credit are and ought to be given in Judicature and thereout.

In testimony whereof I have hereunto set my hand and affixed the Great Seal of the State at the Capitol in the City of Madison, this 4th day of August, A. D. 1917.

[SEAL.] L. B. NAGLER,
Assistant Secretary of the State of Wisconsin.

1633 State of Wisconsin, Land Department.

MADISON, August 3d, 1917.

I, William H. Bennett, Chief Clerk of the Wisconsin State Land Office, hereby certify that the annexed copy of the original record of Swamp Land, Patent No. 38529 Covering Lot numbered two (2) Section No. twenty-four (24) Township No. forty-nine (49) North of Range No. fifteen (15) West, Fourth Principal Meridian, State

of Wisconsin has been compared by me with the original record of said patent now on file in the office of the Commissioners of the Public Lands of Wisconsin and that the same is a true copy thereof, and of the whole of such original record.

In testimony whereof I have hereunto set my hand and affixed the official seal of the Commissioners of the Public Lands at the Capitol, in the city of Madison, this third day of August, A. D. 1917.

[SEAL.] W. H. BENNETT,
Chief Clerk.

1634 WIS. EX. 11.

Swamp Lands.

No. 38529.

The State of Wisconsin to all to whom these presents shall come, Greeting:

Whereas, By an Act of the Congress of the United States approved on the 28th day of September 1850, entitled "An Act to enable the State of Arkansas and other States to reclaim the swamp lands within their limits", the lands hereinafter described were granted and have since been duly conveyed by patent to the State of Wisconsin; And whereas, it appears by the records now in the office of the Commissioners of the Public Lands that full payment was made by Anna M. Hugnier on the 27th day of February A. D. 1889, according to the provisions of law, for the following described tract of land, a part of the lands so granted and patented, to wit: The Lot number two (2) of section No. twenty-four (24) in township No. forty-nine (49) North of Range No. fifteen (15) West containing forty-eight (48) acres more or less according to Government survey, and situated in the County of Douglas.

Now, Know Ye, that the State of Wisconsin in consideration of the premises and in conformity with law in such case made and provided, has bargained, sold, granted and conveyed, and by these presents does bargain, sell, grant and convey, unto the said Anna M. Hugnier and to her heirs and assigns the said tract of land above described: To have and to hold the same, together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto beloging unto the said Anna M. Hugnier and to her heirs and assigns forever.

1635 In testimony whereof, we Ernst G. Timme, Secretary of State, Henry B. Harshaw, State Treasurer, and Charles E. Estabrook, Attorney General *General*, Commissioners of the Public Lands of the State of Wisconsin have caused these letters to be made patent, and our official seal to be hereunto affixed.

Given under our hands at the Capitol, in the City of Madison,

this first day of March, in the year of Our Lord, one thousand eight hundred and eighty nine.

ERNST G. TIMME,
Secretary of State,
H. B. HARSHAW,
State Treasurer,
C. E. ESTABROOK,
Attorney General,
Commissioners of the Public Lands.

Certified copy of Swamp Lands Patent No. 38529. Lot No. 2, Section 24, Town, 49, Range 15 W. Douglas County. The State of Wisconsin to Anna M. Hugnier, Office of Register of Deeds. —— County, Wis. — Recorded —— — 191— at — o'clock — on page —, volume —, of deeds. —— ——, Register.

1636 UNITED STATES OF AMERICA:

The State of Wisconsin, Department of State.

To all to whom these presents shall come, Greeting:

I, Merlin Hull, secretary of the State of Wisconsin, and Keeper of the Great Seal Thereof, Do Certify that W. H. Bennett, Esquire, whose name appears subscribed to the annexed attestation which attestation is in due form, was at the date thereof Chief Clerk of the Wisconsin State Land Office, authorized and empowered by law to certify to the records thereof.

I further certify that to all acts by him so done full faith and credit are and ought to be given in Judicature and thereout.

In testimony whereof I have hereunto set my hand and affixed the Great Seal of the State at the Capitol in the City of Madison, this 4th day of August, A. D. 1917.

[SEAL.]

L. B. NAGLER,
Assistant Secretary of the State of Wisconsin.

1637 STATE OF WISCONSIN:

LAND DEPARTMENT, August 3d, 1917.

I, William H. Bennett, Chief Clerk of the Wisconsin State Land office hereby certify that the annexed copy of the original record of Swamp Land Patent No. 23245, covering the Lot Numbered three (3) section No. twenty-five (25) Township No. forty-nine (49) North of Range No. fifteen (15) West of the Fourth Principal Meridian, State of Wisconsin, has been compared by me with the original record of said patent now on file in the office of the Commissioners of the Public Lands of Wisconsin and that the same is a true copy thereof, and of the whole of such original record.

In testimony whereof, I have hereunto set my hand and affixed the official seal of the Commissioners of the Public lands at the

Capitol, in the City of Madison, this third day of August, A. D. 1917.

[SEAL.] W. H. BENNETT,
Chief Clerk.

1638 Wis. Ex. 12.

No. 23245.

The State of Wisconsin to all to whom these presents shall come, Greeting:

Whereas, By an Act of the Congress of the United States approved on the 28th day of September A. D. 1850, Entitled an "Act to enable the State of Arkansas and other states to reclaim the swamp lands with their limits" the lands hereinafter described, were granted and have since been duly conveyed by patent to the State of Wisconsin; and whereas, it appears by the reports and records of the Commissioners of School and University Lands, that full payment was made by S. H. Clough on the 18th day of December A. D. 1873, according to the provisions of law for the following described tract of land to wit: The lot No. three (3) of Section No. twenty-five (25) in Township No. forty-nine (49) North of Range No. fifteen (15) West containing twenty-five (25) 60/100 25-60/100 acres more or less according to Government survey and situated in the County of Douglas.

Now Know Ye, that the State of Wisconsin in consideration of the premises, and in conformity with law in such case made and provided, has bargained, sold, granted and conveyed, and by these presents does bargain, sell grant and convey unto the said S. H. Clough and to his heirs and assigns the above described tract of land: To have and to hold the same, together with all the rights, privileges immunities and appurtenances of whatsoever nature thereunto belonging unto the said S. H. Clough and to his heirs and assigns forever.

1639 In testimony whereof we, Peter Doyle, Ferdinand Kuehn, and A. Scott Sloan, Commissioners of School and University Lands of the State of Wisconsin, have caused these letters to be made patent and the Secretary of State has caused his official seal to be hereunto affixed.

Given under our hands at Madison this 20th day of January in the year of our Lord one thousand eight hundred and seventy-four.

PETER DOYLE,
Secretary of State,
FERD. KUEHN,
State Treasurer.
[SEAL.] A. SCOTT SLOAN,
Attorney General,
Commissioners of School and University Lands.

Certified copy of Patent No. 23245. The State of Wisconsin to S. H. Clough.

1640 UNITED STATES OF AMERICA:

The State of Wisconsin, Department of State.

To all to whom these presents shall come, Greeting:

I, Merlin Hull, secretary of the State of Wisconsin, and Keeper of the Great Seal Thereof, Do Certify that W. H. Bennett, Esquire, whose name appears subscribed to the annexed attestation which attestation is in due form, was at the date thereof Chief Clerk of the Wisconsin State Land Office, authorized and empowered by law to certify to the records thereof.

I further certify that to all acts by him so done full faith and credit are and ought to be given in Judicature and thereout.

In testimony whereof I have hereunto set my hand and affixed the Great Seal of the State at the Capitol in the City of Madison, this 4th day of August, A. D. 1917.

[SEAL.]

L. B. NAGLER,
Assistant Secretary of the State of Wisconsin.

1641 *Journal of the Senate, Thirty-eighth Session.*

Eighteenth Day.

ST. PAUL, MONDAY, February 3, 1913.

The Senate met at 11 o'clock A. M. and was called to order by the President.

* * * * * * *

Mr. Sullivan G. H., moved that the report of the special committee of the Legislature of the Session of 1911 to determine the Minnesota-Wisconsin Boundary dispute, be not read, but be printed in the Journal of the Senate and that 200 extra copies of the Senate Journal be printed for the use of the Senate.

Which motion prevailed.

Report of Minnesota-Wisconsin Boundary Commission.

To the Legislature of the State of Minnesota:

The joint committee created by Joint Resolution of the Legislature of 1911, which Resolution, entitled "Joint Resolution appointing a committee to confer with committee from Legislature of Wisconsin relative to settlement of Boundary dispute between the State of Minnesota and State of Wisconsin; and matters incident thereto, and to submit recommendations in regard thereto and appropriating money therefor," was approved April 19th, 1911, and appears as "Joint Resolution No. 9." General Laws 1911, and the period of service of said Committee having been extended by Resolution, H. F. No. 1160, Session 1911, and by Resolution Extra Ses-
1642 sion, 1912, now beg *to* leave to report as follows:

That on the 5th day of August, 1911, your committee met

with the committee of the Legislature of Wisconsin at the Minnesota State Capitol and said Committees were there organized as a Joint Boundary Commission, The Commission then *the* fixed upon a date and place of meeting to take up the question of issue. Pursuant thereto the Joint Commission convened at the City of Red Wing, Minnesota, on August 29th, 1911, and thence proceeded by boat to view that part of the disputed boundary line extending through Lake Pepin, making a thorough examination thereof.

On August 30th, 1911, the Joint Commission reconvened at the City of Duluth, Minnesota, and there heard representatives of the commercial interests of that city and of the property owners affected by the boundary dispute. The U. S. Ship Vidette was placed at the service of the Commission by the Federal Officials in charge and the Commission made an examination of the shores, channels and waters of Superior Bay, St. Louis Bay, Spirit Lake and the waters of the St. Louis River through which the boundary line extends. The Commission then adjourned to the City of Superior, Wisconsin, where a hearing was granted the representatives of the commercial and property interests of that city, affected by the dispute.

After this hearing the Committee on the part of Wisconsin submitted to the Joint Commission a statement, setting forth the claims of Wisconsin relative to the disputed boundary line which statement is as follows:

Statement of the Position of the Wisconsin Committee on the St. Louis River Boundary Line Controversy.

1643 The Committee representing the State of Wisconsin contends that the boundary line between the States of Wisconsin and Minnesota through the St. Louis River, is identical with the center of the main channel of said River, as the same is indicated on maps and records of the United States War Department, made prior to the construction of Artificial channels in said River. It believes this position well grounded in the law, and will adhere to same unless confronted — weighty and convincing consideration.

It may be that on account of modern commercial conditions, it is desirable that this line be varied somewhat. Upon this proposition this committee expresses no opinion at this time. If, after a thorough consideration of the premises, it should seem desirable to bring about any changes in such line, it will be the purpose of this Committee to consider whether a new line may be established that will promote commercial interests without seriously affecting the jurisdiction of the two States; but it will maintain at all times that any material surrender of jurisdiction by Wisconsin shall be compensated in kind by Minnesota.

(Signed) W. C. OWEN,
PAUL P. HUSTING,
C. A. INGRAM,
J. E. McCONNELL,
A. M. LONG,
Committee on the Part of Wisconsin.

August 31, 1911, the Joint Commission reconvened at the City of Superior, Wisconsin, and your committee then submitted the following statement setting forth on the part of Minnesota, the
1644 claims of this State as to the disputed boundary line:

Statement of the Minnesota Committee on the Interstate Boundary in the Waters at the Head of Lake Superior, including the St. Louis River.

The Committee representing the State of Minnesota begs to submit the following statement in reply to the statement of the Wisconsin Committee.

We regard the Duluth-Superior Bay and the Bay of St. Louis as an arm of Lake Superior and as waters of the Lake, and that St. Louis Bay extends up as far at least as the Union therewith of the channel that skirts around the southwesterly end of Big Island. That the constitutional boundary through the middle of Lake Superior to the mouth of the St. Louis River and through the main channel of the River to the first rapids above the Indian Village (Fon de Lac) is but a general outline and in no manner conflicts with this view as the mouth of the river is not fixed and from the very nature of things there was no attempt made at detail in the description of the constitutional boundary. The general government under the paramount power reserved in it has conducted extensive improvements in these waters in aid of navigation and commerce and has established dock lines on either side beyond which property owners may not go with their improvements except at the risk of being required to remove or relinquish them without compensation.

Above Big Island it may be conceded that there is an evenly defined main channel of the river. The Government improvements are fast taking the form of deepening the entire waters of these bays, outside of the dock line. The growth of commerce requires
1645 it. As the waters narrow in Upper St. Louis Bay, and into the banks of the River beyond Big Island, the Government has improved the channel by deepening the ship course between the banks and between the dock lines, and substantially through the middle of the channel. The sinuous course of deepest soundings, which was impracticable for ship course in modern commerce, has been improved by a better course less sinuous, but curving with the general course of the boundary waters and greatly facilitating commerce thereon. Two great cities are growing up on opposite shores, whose interests, unaffected by friendly rivalry, are in the broad sense, in common. It is the view of the Minnesota Committee that the bed of all these waters so far as title is concerned, rests in the respective states in sovereign capacity as an inalienable trust. That the interstate boundary line therein should be settled as a matter of convention on a broad and practicable basis, so as to preserve to each state and the citizens thereof, access to the navigable and navigated waters. That this principle and constitutional boundary will

be given full force and effect by extending the line from the Superior entry, between Minnesota and Wisconsin points, midway between the dock line, as near as may be, to and through the entry between Rice's and Connor's points, passing through the center of the swing pier of the Inter-State Bridge and midway between the two draws of the Northern Pacific Bridges and trestle, thence up through the middle of St. Louis Bay, midway between the harbor lines passing through the center of the swing pier of the Northern Pacific Grassy Point bridge and through the middle of Upper St. Louis Bay, mid-
way between the dock lines and as the waters narrow in Upper
1646 St. Louis Bay, between Big Island and the Minnesota shore, through the middle of the improved Government channel, which passes substantially through the middle of the waters at the Upper End of the Bay and St. Louis River. Such a conclusion—reported to our respective states and confirmed by the Legislature thereof, and by Congress, would settle for all times any controversy of the boundary lines in these waters without injustice to either state, and preserve to the States, their citizens and their industries, the full benefits contemplated in making these navigable waters the boundaries between the states.

We do not consider this a matter of trade in any strict sense, but that the solution sought should be such as to give effect to the principle and purpose above mentioned. If it is deemed that such solution involves concessions, we submit that they are mutual and equitable.

Respectfully submitted,

THOMAS KNEELAND,
MANLEY L. FOSSEEN,
GEO. A. McKENZIE,
ANDREW ANDERSON,
Committee.

The Joint Commission then being unable to agree, adjournment was had subject to call of the Chairman.

Several unsuccessful attempts were made to reconvene said Committee but without avail until on December 11, 1912, the Joint Commission reconvened at the Minnesota State Capitol. Arguments were presented to the Commission by Assistant Attorney General Russell H. Jackson on the part of Wisconsin and by Attorney General Lyndon A. Smith, and Assistant Attorneys General Stevenson and
Weeks on the part of Minnesota. The Commission continued
1647 in session on December 12, 1912, and on the latter day your committee proposed to the Wisconsin committee that the Joint Commission agree on that part of the boundary line lying in the waters of Superior Bay, St. Louis Bay, Spirit Lake and St. Louis River as being substantially in accordance with the statement of your committee as hereinbefore set forth, and as determined by engineers on the part of Minnesota, and that the portion of the boundary line extending through Lake Pepin be agreed upon as extending through the middle of said lake, to be fixed by survey. Said proposal was rejected by the Wisconsin committee and an adjournment asked by

them to enable the Wisconsin committee to hold further hearings at the City of Superior. The Joint Commission then adjourned and reconvened December 18, 1912.

The Wisconsin committee indicated that they had no counter proposition to offer, the views of the two committees being so widely divergent that it was evident an agreement was impossible.

The Joint Commission then took up the matter of uniform laws relating to regulating and licensing taking of fish from boundary waters between the two states. The Joint Commission agreed upon the following conclusions relative to uniform laws regulating and licensing the taking of fish in boundary waters between said states:

We, the undersigned member- of the Joint Boundary Line Commission, appointed by the respective Legislatures of the States of Minnesota and Wisconsin to consider certain matters in dispute concerning the boundary line between the two states, having fully deliberated upon the matters committed to us for our consid-
1648 eration, subscribe to and agree to the following conclusions as the result of our conferences.

First—The controversy existing between the two states concerning the boundary line is fundamental and substantial, and we find and determine that there is no opportunity to and adjustment of this controversy which does not involve a complete surrender by one or the other of the states of its position and contention with reference thereto. We therefore agree that this Commission can arrive at no satisfactory adjustment of these differences.

Second—This Commission is very strongly of the opinion that considerations of public policy on the part of both states demand uniform legislation by the two states upon the subject of Fish and Game Regulations on the boundary waters between the two states and especially upon the Mississippi River, Lake St. Croix, and that part of the Mississippi River known as Lake Pepin and for the purpose of promoting such uniform legislation we agree to recommend to the Legislatures of our respective states the appointment of appropriate committees to act conjointly in formulating and presenting to their respective bodies such proposed legislation upon this subject, tending to prevent conflict between the jurisdictions and authorities of the two states, with reference to such matter. We believe such legislation should provide that the citizens of each state should secure their licenses to fish in such waters from the state of which they are residents, and that such licenses should be recognized by the other state so that the licensee can enjoy the rights of fishing anywhere in the boundary waters upon the license issued to them by the State of which they are residents.

1649 It is also the opinion of this Commission that neither state should require a license fee to be paid by the Citizens of the other state for the purpose of fishing with hook and line in the boundary waters between the two states.

In signing these conclusions it is understood that the position of the two states with reference to the boundary line, is in no sense affected or modified, and that nothing herein contained shall be

considered as prejudicing in any sense the position of either state assumed with reference to such controversy.

Dated this 18th day of December, 1912.

THOMAS KNEELAND,
GEO. A. McKENZIE,
ANDREW ANDERSON,
MANLEY L. FOSSEEN,
GEO. SULLIVAN,
Commissioners on the Part of the State of Minnesota.
W. C. OWEN,
PAUL O. HUSTING,
C. A. INGRAM,
A. H. LONG,
J. E. McCONNELL,
Commissioners on the Part of the State of Wisconsin.

NOTE.—The original of the foregoing Stipulation has been deposited with the Secretary of the State.

Your committee therefore reports that the said Joint Commission was unable to agree to any proposed settlement of the boundary line between the two states.

1650 Your committee recommends that by appropriate resolution a special committee of three from the House and two from the Senate of Minnesota be appointed and be directed to meet and confer with a like committee of the Senate and Assembly of Wisconsin, relative to uniform laws regulating and licensing the taking of fish from the waters of Lake Pepin and that in accordance with the conclusions of the Joint Commission, hereinbefore set forth, that said uniform laws be made to cover all boundary waters between Minnesota and Wisconsin including Lake Pepin and Lake St. Croix. If such uniform and reciprocal laws are enacted, we would recommend that the suit now pending in the United States Supreme Court, relating to the boundary line through Lake Pepin be withdrawn by Minnesota.

Your committee has labored diligently and earnestly to effect an understanding with the committee on the part of Wisconsin as to the disputed boundary line, which might be made the basis of an agreement between these sister states; there is a large area of land upon which great improvements have been made along the St. Louis River, Spirit Lake, St. Louis Bay, and Superior Bay, which lie within what we contend is Minnesota territory, which, is claimed by Wisconsin. This property is both extensive and valuable, and your committee could not agree to recommend any arrangement which would place these great properties belonging to our citizens under the sovereignty of another States; and while we regret that an agreement could not be reached as to the disputed boundary line yet we believe that if uniform and reciprocal laws are enacted by the two states along the lines of the conclusions of the

Joint Commission that much practical good will have been accomlished.

Respectfully submitted,

1651 THOMAS KNEELAND,
GEO. A. McKENZIE,
ANDREW ANDERSON,
MANLEY L. FOSSEEN,
GEO. H. SULLIVAN,
Committee.

1652 Wis. Ex. 16½.

United States of America.

The State of Wisconsin, Executive Department.

To all to whom these presents shall come, Greeting:

I, L. C. Whittet, Private Secretary to the Governor of the State of Wisconsin, hereby certify that the annexed copy of a letter addressed to His Excellency, Governor Robert M. LaFollette, Madison, Wisconsin, by D. D. Gaillard, Captain of Engineers, U. S. A., dated at Duluth, Minnesota, April 1, 1903, has been compared by me with the original thereof in this department, and that the same is a true copy thereof and of the whole of such original letter.

In testimony whereof, I have hereunto set my hand and affixed the Executive Privy Seal at the Capitol, in the City of Madison, this second day of August, A. D. 1917.

[SEAL.]

L. C. WHITTET,
Private Secretary to the Governor.

1653 *River and Harbor Improvements on Lake Superior Portage Lake Ship Canals.*

United States Engineer Office, 519 Providence Building.

DULUTH, MINN., April 1, 1903.

To His Excellency, Governor Robert M. La Follette, Madison, Wis.

SIR: In compliance with instructions received from the chief of Engineers, U. S. Army, I have the honor to advise you of the conditions existing along the lower reaches of the St. Louis River consequent upon operations conducted by the United States for the improvement of Duluth-Superior Harbor, and the channels leading thereto.

As you are doubtless aware, the original channel of the St. Louis River was the boundary line between the States of Minnesota and Wisconsin, which boundary line is believed to co-incide with the full red line shown on the accompanying map. On this map are also shown the new channels in the river and harbor constructed in pur-

suance of a project approved by Congress, and from funds provided for that purpose in the annual appropriations bills. These channels have all been completed for their full width; that between Grassy Point and Big Island, which was not completed at the time the map was issued, being shown by full black lines. The harbor lines are shown by fine broken lines composed of dots and dashes,
1654 alternatively. These harbor lines were approved on November 17, 1899, after a widely advertised public hearing. No objection to proposed location of these lines along the St. Louis River was received from citizens of the locality. By the establishment of these harbor lines the United States, so far as its own interests are concerned, gives the riparian owners the right to fill out for the full distance from the shore to the harbor line, if they so desire.

If this is done, you will note that in the portion of the St. Louis River above Grassy Point, the old channel of the St. Louis River may be completely filled in several places. The artificial accretion thus gained would lie, in some instances, both in the States of Minnesota and Wisconsin. As the new channel is an artificial construction, it is not thought that its effect will be to change the boundary line between the states of Minnesota and Wisconsin following the rule that changes by avulsion do not operate to change state boundaries. It is evident that when in the natural growth of the cities of Duluth and Superior, the areas in question between the harbor lines and the adjacent shores are filled in, and buildings erected upon them, the very irregular boundary line between the two states will be practically obliterated and great confusion must ensue. Citizens of both cities have already been agitating the question, and some of them have requested this office to inaugurate proceedings looking to the establishment of a new boundary line in this vicinity which would conform to the new and permanent channels recently constructed, and would at the same time be satisfactory to the citizens of the respective states affected.

This is a question which the War Department is without
1655 jurisdiction to decide, and it is therefore deemed advisable to inform you of the changes which have been made in the St. Louis River, to the end that the question of boundary (if one has arisen, or should arise in future) may be determined in the manner prescribed in the state constitution.

Very respectfully, your obedient servant,

D. D. GAILLARD,
Captain of Engineers, U. S. A.

1 pkg. separately.

Wis. Ex. 17.

1656 I hereby certify that it was stipulated that Wisconsin Exhibit No. 17, is a letter identically the same as Wisconsin No. 16½ except that such letter was addressed to the Governor of Minnesota instead of to the Governor of Wisconsin.

D. E. ROBERTS.
Commissioner.

1657 Wis. Ex. 18.

UNITED STATES OF AMERICA:

The State of Wisconsin, Department of State.

To all to whom these presents shall come:

I, Merlin Hull, Secretary of State of the State of Wisconsin, and Keeper of the Great Seal thereof, do hereby certify that the annexed copy of Joint Resolution No. 72, Wisconsin Legislature of 1911, is an accurate photostatic copy of the original enrolled resolution on file in this Department and that the same is a true copy thereof and of the whole of such Joint Resolution.

In testimony whereof, I have hereunto set my hand and affixed the Great Seal of the State at the Capitol in the City of Madison, this 31st day of July, A. D. 1917.

[SEAL.] MERLIN HULL,
Secretary of State.

1658 *Jt. Res. No. 53, S.*

Joint Resolution.

A Joint Resolution appointing a committee to confer with a committee from the Legislature of the State of Minnesota, heretofore appointed, relative to settlement of boundary line dispute between the State of Minnesota and State of Wisconsin, and matters incident thereto, and to submit recommendations in regard thereto.

Whereas, a controversy has arisen and exists between the State of Minnesota and State of Wisconsin with reference to the boundary line between said states where the same runs through that part of the Mississippi River known as Lake Pepin, and

Whereas, as similar controversy has arisen and exists between the said States with reference to the waters near the mouth of the St. Louis River, and

Whereas, the controversy as to said Lake Pepin involves the jurisdiction of the said respective states over the rights of fishery in said Lake Pepin, and

Whereas, a suit has been instituted by the State *on* Minnesota against the State of Wisconsin, in the United States Supreme Court to fix and determine the boundary line between said states where the same extends through said Lake and

Whereas, it is desired that pending the determination of said suit in said Supreme Court the laws regulating the taking of fish in said

Lake should be uniform in the said States and that if made
1659 uniform, the enforcement of the law in each of said States in the waters of said lake will be greatly simplified and retaliatory prosecutions avoided, and

Whereas, it has also been suggested that the boundary disputes aforesaid may be adjusted and settled by a convention between said states to be ratified by the Federal Government, and

Whereas, the Legislature of the State of Minnesota has appointed a committee of two members from the Senate and three members from the Assembly to consider said matters.

Now, therefore, be it Resolved, by the Senate, the Assembly concurring, that there be, and there is hereby created a joint committee consisting of two members of the Senate to be appointed by the presiding officer of the Senate, and three members of the Assembly, consisting of the Speaker of the Assembly and two other members thereof to be appointed by the speaker and which committee shall act in the premises aforesaid with the committee from the State of Minnesota and report to the Legislature any proposed settlement of the location of said boundary, at the places above mentioned together with their recommendations thereon; and also to report any proposed legislation which may be agreed on between said committees providing for uniform laws in each of said states regulating and licensing the taking of fish from the waters of said Lake Pepin.

Resolved further, that said committee have power to summon witnesses, compel the production of books and papers and take testimony in relation to the matters hereinbefore specified, and that such committee report their doings hereunder, and recom-
1660 mendations, to the present session of the Legislature at as early a date as possible. And each member of said committee shall be reimbursed by the state for his actual necessary expenses in the performance of the duties herein enjoined.

Whereas, the State of Minnesota has made certain claims in reference to the boundary existing between that state and the State of Wisconsin along the Mississippi River, and particularly that part thereof known as Lake Pepin, which claims are unsupported in law or in fact, and based upon such claims the said State of Minnesota has entered upon waters belonging to the State of Wisconsin and there seized persons citizens of and licensed by this State to fish upon such waters, and has taken and seized property of such persons and removed such persons and property into the State of Minnesota under claim of arrest and confiscation and

Whereas, other and further arrests and like acts are threatened by the State of Minnesota, therefore be it

Resolved by the Senate, the Assembly concurring, that the Attorney General be, and he is hereby, directed to defend by all proper means in any and all actions and proceedings any citizen or licensee

of this State who shall under any such circumstances be seized or molested or whose property shall be taken by the officers, agents or other authorities of the State of Minnesota and to take all necessary steps to prevent any such further acts and to fully protect the citizens and licensees of this state against any such or other unlawful acts on the part of the said State of Minnesota, its officers, agents or other authorities.

1661 THOMAS MIMS,
President of the Senate.
W. H. BELL,
Acting Speaking of the Assembly.

F. M. WYLIE,
Chief Clerk of the Senate.
C. E. SHAFFER,
Chief Clerk of the Assembly.

Department of State. Received, July 7, 1911, 10:50 A. M. J. A. Frear, Secretary of State.

1662 WIS. EX. 19.

UNITED STATES OF AMERICA:

The State of Wisconsin, Department of State.

To all to whom these presents shall come:

I, Merlin Hull, Secretary of State of the State of Wisconsin, and Keeper of the Great Seal thereof, do hereby certify that the annexed copy of report of Minnesota-Wisconsin boundary Commission is an accurate photostatic copy of the original report on file in this Department and that the same is a true copy thereof and of the whole of such report.

In testimony whereof, I have hereunto set my hand and affixed the Great Seal of the State at the Capitol in the City of Madison this second day of August, A. D. 1917.

[SEAL.] MERLIN HULL,
Secretary of State.

1663 *Report of Minnesota-Wisconsin Boundary Commission.*

To the Legislature of the State of Wisconsin:

The Joint Committee created by Joint Resolution No. 72, of the Legislature of 1911, entitled "A Joint Resolution appointing a committee to confer with the committee from the Legislature of the State of *of* Minnesota heretofore appointed, relative to settlement of boundary line dispute between the State of Minnesota and the State of Wisconsin, and matters incident thereto and to submit recommendations in regard thereto," begs leave to submit the following report:

On the fifth day of August, 1911, your Committee met with the

Committee of the Legislature of Minnesota, at the Minnesota State Capitol, *at* said Committees were there organized as a joint Boundary Commission. The Commission then fixed upon a date and place of meeting to take up the questions in issue. Pursuant thereto the joint commission convened at the City of Red Wing, Minnesota, on August 29th, 1911, and thence proceeded by boat to view that part of the disputed boundary extending through Lake Pepin, making a thorough examination thereof.

On August 30th, 1911, the Joine Commission reconvened at the City of Duluth, Minnesota, and there heard representatives of the commercial interests of that city and of the property owners affected by the boundary dispute in the St. Louis River and the St. Louis Bay. The U. S. Ship Vidette was placed at the service of the Commission by the Federal officers in charge and the Commis-
1664 sion made an examination of the shores, channels and waters of Superior Bay, St. Louis Bay, Spirit Lake and the waters of the St. Louis River through which the boundary line extends. The Commission then adjourned to the City of Superior, Wisconsin, where a hearing was granted the representatives of the commercial and property interests of that City affected by the dispute.

After this hearing, your Committee submitted to the Joint Commission, a statement setting forth the claims of Wisconsin relative to the disputed boundary lines which statement is as follows:

Statement of the Position of the Wisconsin Committee on the St. Louis River Boundary Line Controversy.

The Committee representing the State of Wisconsin, contends that the boundary line between the states of Wisconsin and Minnesota through the St. Louis River, is identical with the center of the main channel of said river, as the same is indicated on maps and records on the United States War Department, made prior to the construction of artificial channels in said River. It believes this position well grounded in the law, and will adhere to same unless confronted by weighty and convincing consideration.

It may be that on account of modern commercial conditions, it is desirable that this line be varied somewhat. Upon this proposition this committee — no opinion at this time. If, after a thorough consideration of the premises, it should seem desirable to bring about any changes in such line, it will be the purpose of
1665 this Committee to consider whether a new line may be established that will promote commercial interests without seriously affecting the jurisdiction of the two states; but it will maintain at all times that any material surrender of jurisdiction by Wisconsin shall be compensated in kind by Minnesota.

(Signed) W. C. OWEN,
PAUL O. HUSTING,
C. A. INGRAM,
J. E. McCONNELL,
A. M. LONG,
Committee on the Part of Wisconsin.

August 31st, 1911, the Joint Commission reconvened at the City of Superior, Wisconsin, and the committee on the part of the State of Minnesota then submitted to the Joint Commission statement, setting forth on the part of that State its claims as to the disputed boundary line.

Statement of the Minnesota Committee on the Interstate Boundary in the Waters at the Head of Lake Superior, Including the St. Louis River.

The Committee representing the State of Minnesota begs to submit the following statement in reply to the statement of the Wisconsin Committee.

1666 We regard the Duluth-Superior Bay and the Bay of St. Louis as an arm of Lake Superior and as the waters of the Lake, and that the St. Louis Bay extends up as far at least as the union therewith of the channel that skirts around the southwesterly end of Big Island. That the constitutional boundary through the middle of Lake Superior to the mouth of the St. Louis River and through the main channel of the river to the first rapids above the Indian Village (Fond du Lac) is but a general outline and in no manner conflicts with this view as the mouth of the river is not fixed and from the very nature of things there was no attempt made at detail in the description of the constitutional boundary. The general government, under the paramount power reserved in it, had conducted extensive improvements in these waters in aid of navigation and commerce and has established dock lines on either side beyond which property owners may not go with their improvements except at the risk of being required to remove or relinquish them without compensation.

Above Big Island it may be conceded that there is an evenly defined main channel of the river. The Government improvements are fast taking the form of deepening the entire waters of these bays, outside the dock line. The growth of commerce requires it. As the waters narrow in Upper St. Louis Bay, and into the banks of the River beyond Big Island, the government has improved the channel by deepening the ship course between the banks and between the dock lines, and substantially through the middle of the channel. The sinuous course of deepest soundings, which was impracticable for ship course in modern commerce, has been improved by a better course less sinuous, but curving with the general

1667 course of the boundary waters and greatly facilitating commerce thereon. Two great cities are growing up on opposite shores, whose interests, unaffected by friendly revalry, are in the broad sense in common. It is the view of the Minnesota committee that the bed of all these waters, so far as title is concerned, rests in the respective states in sovereign capacity as an inalienable trust. That the interstate boundary line therein should be settled as a matter of convention on a broad and practical basis, so as to preserve to each state and the citizens thereof, access to the navigable

and navigated waters. That this principle and constitutional boundary will be given full force and effect by extending the line from the Superior entry, between Minnesota and Wisconsin points midway between the dock line, as near as may be, to and through the entry between Rice's and Connor's Points, passing through the center of the swing pier of the inter-state bridge and midway between the two draws of the Northern Pacific Bridges and trestle, thence up through the middle of St. Louis Bay, midway between the harbor lines, passing through the center of the swing pier of the Northern Pacific Grassy Point bridge and through the middle of Upper St. Louis Bay, midway between the dock lines, and as the waters narrow in Upper St. Louis Bay, between Big Island and the Minnesota shore through the middle of the improved government channel, which passes substantially through the middle of the waters at the upper end of the Bay and St. Louis River. Such a conclusion—reported to our respective states and confirmed by the Legislatures thereof, and by Congress, would settle for all time any controversy of the boundary lines in these waters without injustice to either state, and preserve to the states, their citizens and their in-
1668 dustries, the full benefits contemplated in making these navigable waters the boundaries between the states.

We do not consider this a matter of trade in any strict sense, but that the solution sought should be such as to give effect to the principle and purpose above mentioned. If it is deemed that such solution involves concessions, we submit they are mutual and equitable.

Respectfully submitted,

THOMAS KNEELAND,
MANLEY L. FOSSEEN,
GEO. A. McKENZIE,
AND. ANDERSON,
Committee.

The Joint Committee then being unable to agree adjournment was had subject to the call of the chairman.

Several unsuccessful attempts were made to reconvene said committee, but without avail until on December 11th, 1912, the Joint Commission reconvened at the Minnesota State Capitol. Arguments upon the legal aspects of the controversy were presented to the Commission by Assistant Attorney General, Russell H. Jackson, on the part of Wisconsin, and by Attorney General Lyndon A. Smith, and Assistant Attorneys General Stevenson and Weeks on the part of Minnesota. The Commission continued in session on December 12th, 1912, and on the latter day, the committee on the part of the state of Minnesota submitted a proposition of settlement to your committee, which was practically the proposition submitted at the conference held in Superior on the 31st day of August, 1911, and which is hereinbefore set forth. This proposition was promptly rejected by your Committee and while it was believed that
1669 the differences between the two committees were so fundamental that further negotiations would be without avail, yet

it was felt on the part of your committee that the Commission should not dissolve without having exhausted all efforts looking towards a solution of a compromise of the controversy. For the purpose of again meeting with the people of the City of Superior, whose interests, both property and commercial are most vitally affected, to consider whether any concession might be made to the State of Minnesota without sacrificing property rights and the dignity of the state, we asked an adjournment of the Joint Commission until the 18th day of December, 1912. In the meantime, your Committee went to Superior and met a large number of the people of that city at the Commercial Club Rooms, where the matter was thoroughly discussed by prominent citizens of Superior. From this discussion, it was made apparent to your committee that for reasons affecting property rights and the future destiny of the City of Superior, as well as the dignity of the State, your committee should adhere strictly to its position as submitted to the Joint Commission at Superior, on the 30th day of August, 1911, which is hereinbefore set forth at length.

The Joint Commission then reconvened at St. Paul, on the 13th day of December, 1912, and the committee from each of the states submitted to the Joint Commission, its purpose to adhere to their respective position as originally stated. It was therefore, apparent the further negotiations looking to any amicable solution of the dispute would be futile.

The Joint Commission did, however, give further con-
1670 sideration to the situation existing in Lake Pepin. It was recognized that the dispute arising with reference to the boundary line, where the same extends through that Lake, grows out of the enforcement of the police regulations concerning the subject of fishing in its waters. Upon due consideration of the situation in that Lake, it was unanimously agreed that the dispute over the boundary line where it runs through said Lake Pepin, would be eliminated if uniform fishing laws could be adopted by the two states and an agreement reached whereby a license from one state would be recognized by the other, so that any person licensed to fish in the waters of Lake Pepin, by either state, could exercise that right through the entire breadth of the Lake.

The Joint Commission then reduced its conclusions to writing, which conclusions are as follows, to wit:

We, the undersigned members of the Joint Boundary Line Commission, appointed by the respective Legislatures of the States of Minnesota and Wisconsin to consider certain matters in dispute, concerning the boundary line between the two states, having fully deliberated upon the matters committed to us for our consideration subscribe to and agree to the following conclusions as the result of our conference.

First. The controversy existing between the two state- concerning the boundary line is fundamental and substantial, and we find and determine that there is no opportunity to an adjustment of this controversy which does not involve a complete surrender by one

or the other of the States of its position and contention with
1671 reference thereto. We therefore agree that this Commission can arrive at no satisfactory adjustment of these differences.

Second. This Commission is very strongly of the opinion that considerations of public policy on the part of both states demand uniform legislation by the two states upon the subject of fish and Game Regulations on the boundary waters between the two states, and especially upon the Mississippi River, Lake St. Croix and that part of the Mississippi River know- as Lake Pepin, and for the purpose of promoting such uniform legislation we agree to recommend to the legislatures — our respective states the appointment of appropriate committees to act conjointly in formulating and presenting to their respective bodies such proposed legislation upon this subject, tending to prevent conflict between the jurisdictions and authorities of the two states, with reference to such matters. We believe such legislation should provide that the citizens of each state should secure their licenses to fish in such waters from the state of which they are residents, and that such licenses should be recognized by the other state so that the licensees can enjoy the rights of fishing anywhere in the boundary waters upon the licenses issued to them by the state of which they are residents.

It is also the opinion of this Commission that neither state should require a license fee to be paid by the citizens of the other state, for the purpose of, fishing with hook and line in the boundary waters between the two states.

In signing these conclusions it is understood that the position of the two states with reference to the boundary line, is in no sense affected or modified, and that nothing herein contained
1672 shall be considered as prejudicing in any sense the position of either state assumed with reference to such controversy.

Dated this 18th day of December, 1912.

THOMAS KNEELAND,
GEO. A. McKENZIE,
ANDREW ANDERSON,
MANLEY L. FOSSEEN,
GEO. H. SULLIVAN,
Commissioners on the Part of the State of Minnesota.

W. C. OWEN,
PAUL O. HUSTING,
C. A. INGRAM,
A. H. LONG,
J. E. McCONNELL,
Commissioners on the Part of the State of Wisconsin.

Your committee, therefore, reports that the said joint commission was unable to agree to any proposed settlement of the boundary line dispute between the two states. Your committee recommends that by appropriate resolution, a special joint committee be appointed and directed to meet and confer with a like committee of the legislature of the state of Minnesota relative to uniform laws

regulating and licensing the taking of fish from the waters of Lake Pepin and that in accordance with the conclusions of the Joint Commission hereinbefore set forth, said uniform laws be made to cover all boundary waters between Minnesota and Wisconsin, in-
1673 cluding Lake Pepin and Lake St. Croix. If such uniform and reciprocal laws are enacted, we believe that the suit now pending in the United States Supreme Court instituted by the State of Minnesota to determine the boundary line through Lake Pepin will be withdrawn.

You- committee has been mindful at all times of the desirability if possible, of arriving at an understanding with the state of Minnesota concerning the disputed boundary line, but it was considered that no agreement should be made on the part of *the* your committee, which involved the surrender of any considerable jurisdiction on the part of the State of Wisconsin, without appropriate compensation therefor from the State of Minnesota. It was apparent at the close of our deliberations that there was no middle ground that could be occupied to arrive at an agreement — involved the absolute surrender by one state or the other of its position in the controversy. This your committee would not do and we could not reasonably expect it from the State of Minnesota. While it is to be regretted that the dispute could not be settled in an amicable way, it is believed that a great deal of benefit will accrue to both states if the recommendations of this committee be carried out with reference to uniform legislation upon the subject of fishing in the boundary waters, and in this connection your committee may be pardoned if they urge the necessity of early action upon this recommendation, in view of the fact that the session of the Legislature of the state of Minnesota is limited to ninety days.

All of which is respectfully submitted,

W. C. OWEN,
PAUL O. HUSTING,
1674 C. A. INGRAM,
JOHN E. McCONNELL,
A. H. LONG,
Committee.

Referred to committee on State Affairs.

1675 Wis. Ex. 20.

Charter of the Village of Duluth.

Chapter I.

Village and Ward Boundaries.

Section 1. The Village of Duluth shall continue to be a municipal corporation and shall have the general powers possessed by municipal corporations at common law, and in addition thereto shall possess the powers hereinafter specially granted, and the authorities

thereof shall have perpetual succession, shall be capable of contracting and being contracted with, of sueing and being sued, pleading and being pleaded in all courts of law and equity and shall have a common seal and may change and alter the same at pleasure, and may take, hold, and purchase lease and convey such real, personal and mixed estate as the purposes of the corporation may require within or without the village.

Ses. 2. The territory included in the following boundaries shall constitute the village of Duluth commencing at a point where the line between lots two (2) and three (3) of section twenty-three (23) in township fifty (50) north of range fourteen (14) west, being the dividing line between Banning and Ray's subdivision of Duluth and the Endion division of Duluth intersects the north shore of Lake Superior, running thence north on said first mentioned line to the center of Superior Street, thence southwesterly along said Superior street to thirteenth (13) Avenue east, thence northwesterly along said last named avenue to the alley between Bench Street and East First Street, thence southwesterly along said alley to Eighth
(8) Avenue East, thence northwesterly along said last named
1676 avenue to East Second Street, thence southwesterly along
said last named street to Fourth (4) Avenue East, thence northwesterly along said last named avenue to Fourth (4) Street East, thence Southwesterly along said last named street, to tenth (10) avenue west, thence southeasterly along said last named avenue to First Street west, thence *thence* southwesterly along said last named street to seventeenth (17) Avenue west, thence southwesterly along said last named avenue to Second Street west, thence southwesterly along said last named street to the line between sections four (4) and five (5) township forty-nine (49) north of range fourteen (14) west, thence south to the state line between the states of Wisconsin and Minnesota, thence along said State line to the mouth of the St. Louis River, thence by a straight line to the place of beginning, saving and excepting therefrom all that part of Minnesota Point south of and below the ship canal.

STATE OF MINNESOTA,
County of St. Louis, City of Duluth:

I hereby certify that the City Clerk of the City of Duluth in the State of Minnesota is the custodian of the City Charters of said city; that the foregoing sections are true and correct transcripts of copies of sections 1 and 2 of Chapter 1 of the Charter of the City of Duluth as found in an Act of the Legislature of the State of Minnesota, entitled "An Act to define boundaries of and establish municipal government for the Village of Duluth". The same being
chapter 11, Special Laws of Minnesota for 1881, approved
1677 March 8, 1881, and Acts Amendatory thereof. I further
certify that said City charter is now one of the records of my office.

I further certify that W. H. Borgen is City Clerk of the city of Duluth and that F. D. Ash is Deputy City Clerk of Said City.
Dated August 6th, 1917.

W. H. BORGEN,
City Clerk.

[SEAL.] By F. D. ASH,
Deputy.

STATE OF MINNESOTA,
County of St. Louis:

District Court, Eleventh Judicial District.

I, J. D. Ensign, hereby certify that I am the presiding judge of the District Court, of the Eleventh Judicial District, and that the City of Duluth is located in said Eleventh Judicial District; that the City Clerk of the City of Duluth is the legal custodian of the records of said city, including the various charters of said city; that the present City Clerk is W. H. Borgen and that F. D. Ash is Deputy City Clerk; that the foregoing attestion is in due form and by the proper officer and that the same was signed by D. F. Ash, Deputy City Clerk with whose signature I am familiar.
Dated August 6th, 1917.

J. D. ENSIGN,
Judge of District Court.

I, J. P. Johnson, Clerk of the District Court of the Eleventh Judicial District Court, hereby certify that the Honorable J.
1678 D. Ensign who signed the foregoing certificate is the duly commissioned, qualified and acting presiding judge of said Court.
Witness my hand and the seal of said Court, this 6th day of August, 1917.

J. P. JOHNSON,
Clerk of District Court.

1679 WIS. EX. 21.

Charter of the City of Duluth.

Chapter I.

City Limits.

Sec. 1. The limits of the city of Duluth in the County of Saint Louis are hereby fixed, subject to the annexations hereinafter provided for, as follows, to wit: Beginning at a point where the north line of Section twenty-five (25) township fifty-one (51) north, range thirteen (13) west. in Saint Louis County, Minnesota, intersects the shore line of Lake Superior; thence west to the northwest corner of section twenty-six (26) in said township and range; thence south to the quarter corner on west line of said section twenty-

six (26); thence west to the center of section twenty-seven (27) in said township and range; thence south to the quarter corner on the south line of said section twenty-seven (27) thence west to the northwest corner of section thirty-five (35) in township fifty-one (51) north, range fourteen (14) west; thence south to the southwest corner of said section thirty-five (35); thence west to the northwest corner of township fifty (50) north, range fourteen (14) west; thence south to the southwest corner of said township; thence east to the quarter corner on the south line of section thirty-two (32) in said township and range; thence south to the northwest corner of lot two (2), section five (5) township forty-nine (49) north, range fourteen (14) west; thence east to the shore of Saint Louis Bay; thence southwesterly to the state line in the bay of Saint Louis between Minnesota and Wisconsin; thence along the state line to the mouth of Saint Louis River, at the natural
1680 entry of the Bay of Superior, (between) Minnesota and Wisconsin Points; thence in a straight line to the place of beginning.

STATE OF MINNESOTA,
County of St. Louis, City of Duluth:

I hereby certify that the City Clerk of the City of Duluth in the State of Minnesota is the custodian of the city charters of said city; that the foregoing section is a true and correct transcript or copy of section 1, relating to "City Limits" of chapter 1, of the charter of the city of Duluth, as found in an act of the legislature of the Minnesota, entitled An Act "To define the boundaries of and establish a muncipal government for the city of Duluth." The same being Special Laws of Minnesota for 1887, chapter 2 page 57 approved March 2, 1887, and acts amendatory thereof including special laws, of Minnesota, 1889, chapter 19, page 538, approved April 24, 1889. I further certify that said city charter is now one of the records of my office.

I further certify that W. H. Borgen, is City Clerk of the City of Duluth and that F. D. Ash is Deputy City Clerk of said City.

Dated August 6th, 1917.

W. H. BORGEN,
City Clerk,
By F. D. ASH,
Deputy.

1681 STATE OF MINNESOTA,
County of St. Louis:

District Court, Eleventh Judicial District.

I, J. D. Ensign, hereby certify that I am the presiding judge of the district court of the Eleventh Judicial District, and that the City of Duluth is located in said Eleventh Judicial District; that the city Clerk of the City of Duluth is the legal custodian of the rec-

ords of said city, including the various charters of said city; that the present city clerk is W. H. Borgen and that F. D. Ash is Deputy City Clerk; that the foregoing attestation is in due form and by the proper officer and that the same was signed by F. D. Ash, Deputy City Clerk, with whose signature I am familiar.

Dated August 6th, 1917.

J. D. ENSIGN,
Judge of District Court.

I, J. P. Johnson, Clerk of the District Court of the Eleventh Judicial District, hereby certify that the Honorable J. D. Ensign, who signed the foregoing certificate, is the duly commissioned, qualified and acting presiding judge of said Court.

Witness my hand and the seal of said Court, this 6th day of August, 1917.

[SEAL.]

J. P. JOHNSON.
Clerk of District Court.

1682 Wis. Ex. 22.

Duluth City Charter.

Chapter 1.

Organization.

Boundaries of the City.

Section 1. The territory in the County of St. Louis, and State of Minnesota described as follows shall be and constitute a city governed as herein provided, to-wit:

Commencing at a point where the north line of section twenty-five (25), township fifty-one (51) north of Range thirteen (13), west, in St. Louis county, Minnesota, intersects the shore line of Lake Superior; thence west to the north west corner of section twenty-six (26) and in said township fifty-one (51), north of range thirteen (13), west; thence south to the quarter corner post on the west line of said section twenty-six (26) thence west to the center of section twenty-seven (27) in said township fifty-one north, of range thirteen (13), west; thence south to the quarter corner post on the south line of said section twenty-seven (27) thence to the northwest corner of section thirty-five (35) in township fifty-one (51) north of range fourteen (14) west; thence south to the southwest corner of said section thirty-five (35); thence west to the northwest corner of township fifty (50), north of range fourteen (14), west; thence south to the southwest corner of said township fifty (50) north of range fourten (14) west; thence west to the northwest corner of section two (2) in township forty-nine (49) north of
1683 range fifteen (15) west; thence south to the southwest corner of section fourteen (14) in said township forty-nine (49) north of range fifteen (15) west; thence west to the northwest corner of section twenty-two (22), in said township forty-nine

(49) north of range fifteen (15) west; thence south to the southwest corner of section thirty-four (34) in said township forty-nine (49) north of range fifteen (15) west; thence west on the town line between township forty-eight (48) north of range fifteen (15) west and township forty-nine (49) north of range fifteen (15) west to the southwest corner of said township forty-nine (49) north of range (15) west; thence south on the range line between township forty-eight (48) north of range fifteen (15) west and township forty-eight (48) north of range sixteen (16) west, to the center line of the channel of the St. Louis River; thence along the center line of the channel of said river to the state boundary line between the States of Minnesota and Wisconsin, thence along said State Boundary line to the mouth of the St. Louis River at the entry of the Bay of Superior between Minnesota and Wisconsin Points; thence in a straight line to the place of beginning.

STATE OF MINNESOTA,
County of St. Louis, City of Duluth:

I hereby certify that the City Clerk of the City of Duluth in the State of Minnesota is the custodian of the City Charters of said City; that the foregoing section is a true and correct transcript or copy of section 1, Chapter 1, of the Duluth City charter, adopted by the qualified voters of the City of Duluth at an election held in said City February 6th, 1900, in pursuance with the provisions of Chapter 351 of the laws of Minnesota for the year 1899, and that
1684 said City Charter is now one of the records of my office. I further certify that W. H. Borgen is City Clerk of the City of Duluth and that F. D. Ash is Deputy City Clerk of said City.
Dated August 6th, 1917.

W. H. BORGEN,
City Clerk,
[SEAL.] By F. D. ASH,
Deputy.

1685 STATE OF MINNESOTA,
County of St. Louis:

District Court, Eleventh Judicial District.

I, J. D. Ensign, hereby certify that I am the presiding judge of the District Court, of the Eleventh Judicial District, and that the City of Duluth is located in said Eleventh Judicial District; that the City Clerk of the City of Duluth is the legal custodian of the records of said city, including the various Charters of said City; that the present City Clerk is W. H. Borgen and that F. D. Ash, is Deputy City Clerk; that the foregoing attestation is in due form and by the proper officer and that the same was signed by F. D. Ash, Deputy City Clerk with whose signature I am familiar.
Dated August 6th, 1917.

J. D. ENSIGN,
Judge of District Court.

I, J. P. Johnson, Clerk of the District Court of the Eleventh Judicial District, hereby certify that the Honorable J. D. Ensign, who signed the foregoing certificate, is the duly commissioned, qualified and acting presiding judge of said court.

Witness my hand and seal of said Court, this 6th day of August, 1917.

[SEAL.]

J. P. JOHNSON,
Clerk of District Court.

1686 WIS. EX. 23.

Proposed Charter of the City of Duluth.

Chapter 1.

Name and General Powers.

Section 1. The City of Duluth, in the County of St. Louis, and State of Minnesota shall continue to be, upon the adoption of this charter a municipal corporation of the same name, and with the same boundaries as it now has, to-wit: Commencing at a point where the north line of section twenty-five (25) township fifty-one (51) north of range thirteen (13), west, in St. Louis County, Minnesota intersects the shore line of Lake Superior; thence west to the northwest corner of section twenty-six (26) in said township fifty-one (51) north of range thirteen (13) west; thence south to the quarter corner post on the west line of said section twenty-six (26) thence west to the center of section twenty-seven (27) in the said township fifty-one (51) north of range thirteen (13) west; thence south to the quarter corner post on the south line of said section twenty-seven (27); thence west to the northwest corner of section thirty-five (35) in town ship fifty-one (51) north of range fourteen (14) west; thence south to the southwest corner of said section thirty-five (35); thence west to the northwest corner of township fifty (50) north of range fourteen (14) west; thence south to the southwest corner, of said township fifty (50) north of range fourteen (14) west; thence west to the northwest corner of section two (2) in township forty-nine (49) north of range fifteen (15) west; thence

1687 south to the southwest corner of section fourteen (14) in said township forty-nine (49) north of range fifteen (15) west; thence west to the northwest corner of section twenty-two (22) in said township forty-nine (49) north of range fifteen (15) west; thence south to the southwest corner of section thirty-four (34) in said township forty-nine (49) north of range fifteen (15) west; thence west on the town line between township forty-eight (48) north of range fifteen (15) west; and township forty-nine (49) north of range fifteen (15) west to the southwest corner of said township forty-nine (49) north of range fifteen (15) west; thence south on the range line between township forty-eight (48) north of range fifteen (15) west and township forty-eight (48) north of range sixteen (16) west to the center line of the channel of the St. Louis River thence along the center line of the channel

of said river to the state boundary line between the States of Minnesota and Wisconsin thence along said state boundary line to the mouth of the St. Louis River at the entry of the Bay of Superior between Minnesota and Wisconsin Points; thence in a straight line to the place of beginning.

STATE OF MINNESOTA,
County of St. Louis, City of Duluth:

I hereby certify that the City Clerk of the City of Duluth in the State of Minnesota is the custodian of the City Charters of said City; that the foregoing section is a true and correct transcript or copy of Section 1. of chapter 1, of the Charter of the City of Duluth adopted by the Electors of the City of Duluth on December 3, 1912 pursuant to the provisions of chapter 238, General Laws of Min-
1688 nesota 1903, and pursuant to the provisions of Article 4, Section 36, of the Constitution of the State of Minnesota and Acts amendatory thereof and that said city charter is now one of the records in my office and that the same has been and now is in full force and effect.

I further certify that W. H. Borgen, is City Clerk of the City of Duluth and that F. D. Ash is Deputy Clerk of said City.

Dated August 6th, 1917.

W. H. BORGEN,
City Clerk.

[SEAL.]

By F. D. ASH,
Deputy.

1689 STATE OF MINNESOTA,
County of St. Louis:

District Court, Eleventh Judicial District.

I, J. D. Ensign, hereby certify that I am the presiding judge of the District Court, of the Eleventh Judicial District, and that the City of Duluth is located in said Eleventh Judicial District; that the City Clerk of the City of Duluth is the legal custodian of the records of said city, including the various Charters of said City; that the present City Clerk is W. H. Borgen and that F. D. Ash, is Deputy City Clerk; that the foregoing attestation is in due form and by the proper officer and that the same was signed by F. D. Ash, Deputy City Clerk with whose signature I am familiar.

Dated August 6th, 1917.

J. D. ENSIGN,
Judge of District Court.

I, J. P. Johnson, Clerk of the District Court of the Eleventh Judicial District, hereby certify that the Honorable J. D. Ensign, who signed the foregoing certificate, is the duly commissioned, qualified and acting presiding judge of said court.

Witness my hand and the seal of said Court, this 6th day of August, 1917.

[SEAL.]

J. P. JOHNSON,
Clerk of District Court.

1690 Wis. Ex. 30.

Great Northern Power Company.

Record of Flow of St. Louis River at Thomson Dam.

1908.	Flow cu. Sec. Ft.			1909.	Flow cu. Sec. Ft.		
Month.	Max.	Min.	Mean.	Month.	Max.	Min.	Mean.
Jan.	393	253	319	Jan.	902	402	537
Feb.	446	261	383	Feb.	849	463	587
Mar.	500	331	381	Mar.	761	575	659
Apr.	14,350	471	3,984	Apr.	2,241	701	1,349
May	24,500	3,265	11,863	May	13,339	1,570	6,781
Jun.	26,950	8,050	16,476	Jun.	7,904	941	3,204
Jul.	7,550	972	3,398	Jul.	12,201	376	3,237
Aug.	4,335	604	1,731	Aug.	17,202	2,000	7,178
Sep.	1,655	403	655	Sep.	6,550	797	2,431
Oct.	1,391	545	815	Oct.	4,408	1,228	2,743
Nov.	816	482	602	Nov.	3,826	1,325	2,449
Dec.	602	412	503	Dec.	3,901	1,382	2,335
Yearly	26,950	253	3,418	Yearly	17,202	376	2,791

1691 Great Northern Power Company.

Record of Flow of St. Louis River at Thomson Dam.

1910.	Flow cu. Sec. Ft.			1911.	Flow cu. Sec. Ft.		
Month.	Max.	Min.	Mean.	Month.	Max.	Min.	Mean.
Jan.	1,457	691	911	Jan.	317	192	265
Feb.	1,331	709	888	Feb.	379	274	313
Mar.	2,808	756	486	Mar.	2,055	318	739
Apr.	4,578	1,484	2,680	Apr.	5,272	992	3,284
May	2,877	989	1,740	May	8,388	1,409	3,527
Jun.	2,356	439	996	Jun.	4,009	797	2,204
Jul.	1,274	278	514	Jul.	2,059	281	889
Aug.	1,969	374	797	Aug.	5,621	1,481	3,165
Sep.	1,642	361	760	Sep.	7,721	1,470	3,786
Oct.	2,458	462	959	Oct.	2,098	1,207	1,624
Nov.	618	256	379	Nov.	1,158	542	838
Dec.	318	237	281	Dec.	810	444	568
Yearly	4,578	237	1,031	Yearly	8,388	192	1,778

1692

Great Northern Power Company.

Record of Flow of St. Louis River at Thomson Dam.

1912.	Flow cu. Sec. Ft.			1913.	Flow cu. Sec. Ft.		
Month.	Max.	Min.	Mean.	Month.	Max.	Min.	Mean.
Jan.	683	283	419	Jan.	373	290	332
Feb.	402	171	323	Feb.	488	311	377
Mar.	724	327	432	Mar.	393	301	347
Apr.	6,254	734	2,030	Apr.	8,199	507	3,294
May	10,959	4,402	7,538	May	9,232	2,097	5,089
Jun.	7,685	1,106	3,602	Jun.	8,670	2,018	4,287
Jul.	1,828	398	1,009	Jul.	9,846	2,373	4,687
Aug.	710	295	520	Aug.	2,318	754	1,217
Sep.	1,408	582	909	Sep.	2,415	670	1,466
Oct.	1,800	551	861	Oct.	7,109	1,129	3,434
Nov.	734	347	515	Nov.	1,793	1,024	1,336
Dec.	622	310	410	Dec.	1,371	495	822
Yearly	10,959	171	1,550	Yearly	9,846	290	2,235

1693

Great Northern Power Company.

Record of Flow of St. Louis River at Thomson Dam.

1914.	Flow cu. Sec. Ft.			1915.	Flow cu. Sec. Ft.		
Month.	Max.	Min.	Mean.	Month.	Max.	Min.	Mean.
Jan.	600	424	495	Jan.	645	413	522
Feb.	508	479	525	Feb.	630	444	534
Mar.	726	455	585	Mar.	678	428	530
Apr.	9,555	563	2,220	Apr.	2,153	442	1,116
May	12,670	2,681	7,338	May	6,692	1,798	3,418
Jun.	14,208	2,541	7,217	Jun.	9,663	1,218	5,813
Jul.	9,910	1,391	4,900	Jul.	7,452	1,217	3,112
Aug.	2,488	730	1,224	Aug.	2,374	430	1,109
Sep.	4,425	1,696	2,539	Sep.	756	372	602
Oct.	1,719	1,074	1,399	Oct.	6,674	831	2,475
Nov.	1,109	649	864	Nov.	6,352	973	2,504
Dec.	777	363	568	Dec.	1,085	666	845
Yearly	14,208	363	2,481	Yearly	9,663	372	1,887

1694 Great Northern Power Company.

Record of Flow of St. Louis River at Thomson Dam.

1916.	Flow cu. Sec. Ft.			1917.	Flow cu. Sec. Ft.		
Month.	Max.	Min.	Mean.	Month.	Max.	Min.	Mean.
Jan.	1,590	516	874	Jan.	794	568	665
Feb.	845	571	762	Feb.	706	477	566
Mar.	953	598	756	Mar.	707	422	549
Apr.	26,711	1,001	12,738	Apr.	4,392	721	2,387
May	20,040	9,729	12,789	May	3,523	834	1,707
Jun.	10,437	2,254	4,854	Jun.	1,511	789	1,160
Jul.	10,854	716	3,320	Jul.	1,746	671	1,119
Aug.	6,349	601	1,232				
Sep.	3,276	863	1,734				
Oct.	2,524	794	1,365				
Nov.	1,565	629	1,155				
Dec.	990	521	807				
Yearly	26,711	516	3,532				

Appendix A.—Table of Geographical Positions.—Continued.

Southwest Region of Lake Superior.

Places of Observation.	Altitudes above the Gulf of Mexico.	North latitudes.			West of Greenwich. Longitudes in time.			Longitudes in arc.			Authorities, &c.
	Feet.				h.	m.	s.				(237)
Madeliene island, the trading house and level of the lake (depth of Lake Superior, according to the British Admiralty survey, 792 feet)	620	46°	47′	10″	6	3	34	90°	53′	30″	Nicollet.
St. Louis river, the trading house called Fond du Lac, but about 24 miles upstream from the true Fond du Lac	.....	46	39	50	6	9	1.33	92	15	20	Do.
Culmination of the grand portage, on St. Louis river	1,066	..	..	..	..	..	..	..	..	..	Do.
Upper end of grand portage on St. Louis river	984	..	..	..	..	..	..	..	..	..	Do.
Head of the long rapids, on St. Louis river	.....	46	49	42	6	9	40	92	25	0	Do.
East Savannah river, the mouth	1,264	..	..	..	..	..	..	..	..	..	Do.
Dividing-ridge between East and West Savannah rivers	1,334	..	..	..	..	..	..	..	..	..	Do.
1696											
Portage between Wissakude, or Burnt Wood river, and the head of St. Croix river, emptying into the Mississippi											(128)
Porcupine Hills (Wisconsin Mountain), 330 yards above the lake	956	..	..	..	..	..	..	..	..	..	Do.
Head of the Kettle rapids, or Akkik rapids, on St. Croix river	1,610	..	..	..	..	..	..	..	..	..	British Admiralty survey.
Falls of the St. Croix river	.....	45	54	40	..	..	..	..	..	..	Nicollet.
Kittle-kitigan lake, or Lac Vieux Desert, south island	.....	45	30	10	6	10	40	92	40	0	Do.
Kawasidjiwong river (Montreal river), the mouth	.....	46	7	31	5	57	20.87	89	20	13	Capt. T. J. Cram.
the head	.....	46	33	0.5	6	2	58	90	44	30	Do.
	.....	46	18	38	6	1	38.53	90	24	38	Do.

Duluth-Superior. / Maps. / File number.	room / vault.	case.	drawer. / sect.	D. Drawing. T. Tracing. P. Print. V. Vandike. F. Folio. B. Book. C. Chart.	Scale.	Date.	Field officer.	Description.	Corresp. File number.
20/9.....	C	.....	.....	Cht.....	1,500	1904	.....	State line. copies to Govs. Wis. & Minn. & C. of E.	

Wis. Ex. 44.

1698 WIS. EX. 48.

STATE OF MINNESOTA,
County of St. Louis, ss:

I, Charles Calligan, Register of Deeds of said County do hereby certify that the within is a true and correct copy of the record in my office as found in Book "C" of Deeds on page 440. That I have compared such copy with the original record and that it is a correct transcript therefrom.

Dated this 9th day of August, A. D. 1917.

CHAS. CALLIGAN,
Register of Deeds.

[SEAL.] By C. L. LOFGREN,
Deputy.

Compared. K.
Reading. C.

1699 United States of America

to

Emerson Chase.

Filed for Record Sept. 3, 1862, at ten o'clock A. M.; Recorded in Book "C" of Deeds, on page 440.

Patent.

Certificate No. 710.

The United States of America to all to whom these presents shall come, Greeting:

Whereas, Emerson Chase of Douglas County, Wisconsin, has deposited in the General Land Office of the United States, a certificate of the Register of the Land Office at Portland whereby it appears, that full payment has been made by the said Emerson Chase, according to the provisions of the Act of Congress of the 24th of April, 1820, entitled; "An Act making further provision for the sale of the Public Lands" for the Lots numbered two, and three of section ten; and the lot numbered two of Section eleven, in Township Forty-Eight North of Range fifteen West, in the district lands, subject to sale at Portland, Minnesota, containing fourteen acres, and forty-three hundredths of an acre, according to the Official Plat of the Survey of the said lands, returned to the General Land Office by the Surveyor General, which said tract has been purchased by the said Emerson Chase.

Now Know Ye, that the United States of America, in consideration of the premises, and in conformity with the several acts of

Congress in such case made and provided, have given and
1700 granted, and by these presents do Give and Grant, unto the said Emerson Chase and to his heirs the Tract above described;

To have and to hold the same, together with all the rights, privileges, immunities and appurtenances of whatsoever nature, thereunto belonging unto the said Emerson Chase and to his heirs and assigns forever.

In testimony whereof I, James Buchanan, President of the United States of America, have caused these letters to be made patent and the seal of the General Land Office to be hereunto affixed.

Given under my hand at the City of Washington the second day of July, in the year of our Lord one thousand eight hundred and sixty and of the Independence of the United States the eighty-fourth.

By the President:

JAMES BUCHANAN.

[SEAL.] By I. A. B. LEONARD,
Sec'y.

J. N. GRANGER,
Recorder of the General Land Office.

Recorded, Vol. 1, page 27.

1701 WIS. EX. 56.

List of Maps of Superior and Vicinity upon Which No Boundary Line is Shown.

1. Real estate map issued by George F. Kelly, First National Bank Building, Superior, Wisconsin, copyrighted in 1916.

2. Map of Duluth and Superior showing lines of the Duluth Street Railway Company, copyrighted 1911 by the Duluth Street Railway Company.

3. T. W. Wahl's map of Head of Lake Superior showing a considerable portion of Douglas and St. Louis Counties cities of Superior and Duluth, and the waters of St. Louis Bay and Bay of Superior, issued by T. W. Wahl, of Duluth, no date given.

4. Strand's sectional map of the City of Superior and vicinity, compiled, drawn and published by M. A. Strand, civil engineer and surveyor, Superior, Wisconsin, 1892.

5. Map of City of Superior and vicinity in colors, showing various divisions, subdivisions, puble parks, poor farm, etc.

6. Map of West Superior published by Land and River Improvement Company in 1890 showing plat of West Superior and portion of Central Park and the waters out to the established dock line, but no part of the Minnesota shore is shown.

7. Map same as above described issued in 1887.

8. Map of Superior, Douglas County, compiled from County records and from the natural survey by E. B. Banks, County sur-

veyor, March, 1887; shows Minnesota Point, end of Rice's Point, but does not show Minnesota shore above Rice's Point.

1702 9. Map of Duluth, Minnesota, issued by C. E. Franklin, civil engineer, of Duluth, Minnesota, and published by St. Paul Lithograph and Engraving Company; no date given.

10. Sectional map showing lands for sale by the Farmers Land and Cattle Company, Ltd., Globe Building, St. Paul, Minnesota, in Douglas County, Wisconsin, by George F. Kelly, copyrighted in 1911.

11. Map of portion of Douglas and LaPointe Counties, Wisconsin, also St. Louis County and a portion of Lake County, Minnesota territory, situated on Lake Superior, drawn by R. Relf, published by Mitchell and Relf, land agents, Superior, Wisconsin, in 1856.

12. Map of Douglas County, Wisconsin, showing copper bearing formation issued by the Evening Telegram, of West Superior, Wisconsin; shows entire head of lake.

13. Map of St. Louis County, Minnesota, prepared for official surveys by B. K. Coe, Civil Engineer, and John Harrison, draughtsman, in 1911.

No. 14, ORIGINAL.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

REPLY BRIEF FOR STATE OF MINNESOTA.

INDEX

FIRST.

The dividing line between Minnesota and Wisconsin is through approximately the center of these waters and the question as to where the mouth of the river lies is to be determined as a question of fact, and from the acquiescence of the States and the people thereof 1

Acquiescence 10

Importance of Boundary Line and the Construction of the Acts of Congress with reference thereto 13

SECOND.

Assuming, for the purpose of argument only, that the waters to the westerly of Grassy Point and easterly of Big Island are river waters and not bay waters, the evidence establishes beyond a reasonable doubt that the state line is located in the "navigable and navigated channel", in so far as the disputed territory is concerned, far to the south of all dock property constructed on the Minnesota shore; if this position is correct the claims of the State of Wisconsin in this action are entirely defeated 24

1. The argument of counsel for Wisconsin that the problem before the court is to determine the state line fixed in 1846, is true only with some such limitations as: "subject to whatever changes therein that may have been caused, in the absence of avulsion, by subsequent variations in the navigable and navigated channel"; otherwise the argument is misleading, and ignores the holdings of this court 27

2. The line of deepest soundings is not the criterion as to the main channel either in the absence or presence of navigation, and when (as in this case) the evidence clearly shows that navigation was not along the line of deepest soundings, that line has no bearing on the question of where the state line is located 29

3. Evidence of navigators nearest in point of time to 1846 is not necessarily decisive 41

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Supreme Court of the United States

OCTOBER TERM, 1919.

No. 18 ORIGINAL

STATE OF MINNESOTA, Complainant,
vs.
STATE OF WISCONSIN, Defendant.

REPLY BRIEF.

FIRST.

The dividing line between Minnesota and Wisconsin is through approximately the center of these waters and the question as to where the mouth of the river lies is to be determined as a question of fact, and from the acquiescence of the States and the peoples thereof

The ultimate question here to be determined is where the boundary line between the State of Minnesota and Wisconsin runs through the waters in question. It is certain that the enabling acts and the acts admitting Minnesota and Wisconsin to the Union, did not so definitely locate either the mouth of the St. Louis River or the main channel of the St. Louis River that these things can be determined by an inspection of the acts. The acts of Congress were simply in general terms. They did not locate the mouth of the river except as the mouth. They did not locate the main channel except as the main channel. These questions, therefore, must be determined as the fact is. There is nothing in these acts of Congress to indicate that Congress intended to locate

either the mouth of the river or the main channel at any other place than where they in fact exist.

At the commencement and during the putting in of the evidence in the case, counsel for Wisconsin as well as for Minnesota, clearly understood that these were the issues—where the mouth of the river in fact was and where the main channel in fact was, and to what extent the boundary had been fixed by acquiescence. To that end, testimony covering more than one thousand pages of record was introduced. Minnesota's original brief was written in a discussion of these propositions and was completed in December, 1918. It was then the understanding that Wisconsin's brief would be prepared and served within about two months thereafter, but their brief was not served until about the 6th or 7th of August, 1919. In the meantime, new counsel had been substituted for those who tried the case for Wisconsin, and these new counsel evidently considering or conceding that the evidence of Minnesota was overwhelming as to where the mouth of the river was in fact located, and that the state line ran substantially midway between the shores according to the acquiescence of the parties, conceiving that they must have a new theory to win, therefore with hardly a reference to the evidence in the case, with great industry, produced a brief on the theory of attempting to show what was in the mind of Congress in using the term "mouth of the river" in these acts. Upon this point they have hardly referred in any way to the evidence introduced and not at all to the physical characteristics of these waters and the shores, and have not attempted in any way to show where the mouth of the St. Louis River in fact is. This we can see they could not do to their satisfaction and they are therefore contenting themselves with asking the Court to declare from an inspection of a large mass of documents, not in evidence, what may or may not have been the intention of Congress in the use of this term, "mouth of the river". With all their diligence they have discovered nothing to show that any of the data to which they refer was before Congress or the authors

of the bill and our examination shows that there was no discussion of these matters in Congress or in the legislatures at the time the acts were passed. We maintain that if Congress had in mind the fixing of the mouth of the St. Louis River definitely between Minnesota and Wisconsin points, it was easy enough in so important an act as the admission of a State to the Union, definitely to have located the mouth either by referring to latitude and longitude, or by reference to the distance from the Indian Village (which reference it did use in locating the first rapids above the same), or by some other clear and definite description, but this Congress did not see fit to do. The fact undoubtedly is that the physical characteristics of these waters were comparatively little known to Congress at the time these acts were passed, and in drawing the acts it is but fair to assume that Congress used simply terms of general description, leaving the matter of the exact location of the mouth to be determined as the country became better known, according as to where the mouth is in fact located. Congress used a term no more definite with reference to the mouth of the river than it did with reference to where the main channel of the river might be, and Wisconsin is forced to concede that the question of where the main channel is, would have to be determined as a question of fact. By the same line of reasoning adopted by Wisconsin to prove that Congress intended definitely to locate the mouth of the St. Louis River at some given point simply because some explorers or traders or someone attached to an expedition had previously referred to it as being at some given point, it could be conclusively proved that if Congress intended to locate the mouth of the river between Wisconsin and Minnesota points, it likewise also intended to locate the main channel midway between the shores in as much as the only maps then in existence, showed the line of travel to be midway between the shores as did the track survey of Lieutenant Bayfield.

We think, however, that the fairer conclusion is that Congress used these terms simply as terms of general description,

leaving the fact as to where the mouth of the river might be, to be ascertained when the characteristics and situation were better known.

This Court, in the case of the *United States vs. Rodgers*, 150 U. S., 149, referring to whether the Detroit River was a part of the Great Lakes, has said:

> "Bodies of water of an extent which cannot be measured by the unaided vision, and which are navigable at all times and in all directions, and border on different nations or states, or people, and find their outlet in the ocean as in the present case, *are seas in fact, however they may be designated. And seas in fact do not cease to be such, and become lakes, because by local custom they may be so called.*"

We maintain as in our original brief, that the mouth of the St. Louis River was in fact at the southwesterly end of Big Island, and that these waters constitute an arm or portion of Lake Superior. If as suggested by counsel for the State of Wisconsin, the water should be deemed as estuary, it does not follow that they are a part of St. Louis River as distinguished from the Lake. Webster defines estuary as "a passage at the mouth of a river or lake where the tide meets the current; an arm of the sea; a frith." The Encyclopedia Britannica says, "estuary (from the Latin *aestuarium;* a place reached by the *aestus*, the tide); an arm of the sea narrowing inwards at the mouth of the river where the sea and fresh water meet and are mixed."

To what extent this Court will take judicial notice of or consider matters not in evidence, we do not know, but we submit that at least many of the things referred to by counsel for Wisconsin should not be deemed matters for judicial notice. Most of these things are cited by counsel in an attempt to demonstrate

what was the intent of Congress, or in the mind of Congress, in the use of certain language in these acts, but there is nothing to suggest that Congress in fact had these matters called to its attention, and most of them were at the time of the act admitting Wisconsin to the Union, of such recent occurrence that is could not be presumed that Congress knew of them as matters of history or general knowledge in 1846. Even Nicollet whose map was referred to in these acts stated in his report that this territory was little known and undeveloped and inhabited by savage tribes. Record page 448. Unless it can be shown, therefore—and it cannot—that the matters on which counsel rely were so generally known as to be matters of common knowledge, or were in fact brought to the attention of Congress—and there is no such showing—then they should not be considered as determining what was in the mind of Congress or its intent in using any particular language. If they should not be so considered, then their only purpose, if taken judicial notice of by the Court at all, would be as bearing upon the question where the mouth of the river is in fact located. On this question, while if properly in evidence before the Court, they might be matters for fair consideration, yet we submit that they are not persuasive upon the question as to what is in fact the mouth of the river. Many citations referred to by Wisconsin counsel indifferently designate the opening between Wisconsin and Minnesota Points sometimes as "the outlet", or "the entry", or "the mouth". Even to this day we do not dispute that this opening is often referred to as the entry, or the Superior entry, but we do not believe that it is often referred to as the mouth, and when, if ever it is, by those who are discriminating in their laguage, we think the reference is rather as the mouth or outlet of the bays than to the river. But as above pointed out in the case of *United States vs. Rodgers*, the fact as to what these waters are, is not changed even if by local custom they may be erroneously called. The references, as cited by Wisconsin counsel, in themselves show a considerable divergence as to where the mouth of the river was considered to

be; some locating it between Minnesota and Wisconsin Points; some between Rice's and Connors Points, and some at Grassy Point.

There has been absolutely no attempt in the brief of Wisconsin to answer our argument that the mouth of the river is in fact, by physical characteristics, and according to science and geography, located at the southwesterly end of Big Island. They have not even refered to the mass of evidence of our witnesses as well as theirs, to this point, but instead they have gone entirely outside of the record and made their entire argument in an attempt to prove what may or may not have been in the mind of Congress in the use of the term "mouth of the river". Indeed on page 371 of their brief, they have become so self-satisfied with the eloquence of their argument, that with a final flourish, they say:

> "The evidence as to this proposition is so definite and decisive that it has not seemed worth while to dignifiy the attempt of Minnesota to raise an issue in this respect by giving any attention to the proof submitted or argument offered upon this point."

Thus with one wave of the hand they attempt to brush aside all of the evidence contained in the more than one thousand pages of the record put in both by Wisconsin and Minnesota upon the question as to where the mouth of the river in fact is, and they claim that for more than one hundred years, it has been fixed beyond the possibility of dispute. It seems to us that after writing 371 pages of their brief, in their exuberance and self satisfaction with their industry they have overlooked the statement made on page 1 of their brief to the effect that this Court in the case of *Wisconsin vs. Duluth,* 96 U. S. 379, decided in 1877, forty-two years ago, as well as in the case of *Norton v.*

Whiteside, 249 U. S. 144, had the question before it as to whether these waters were in fact a part of Lake Superior or of the St. Louis River. In the earlier case, decided forty-two years ago, it appears that there had been for several years previously, other suits pending involving these questions. So we may fairly assume that by the records of this Court for at least fifty years of the one hundred referred to by counsel, this question has not been fixed beyond the possibility of dispute. If this be a fair assumption, it may be noted that fifty years ago, the earliest of the acts of Congress here involved had been passed only twenty-three years previously, and the later of the acts, admitting Minnesota to the Union, had only been passed ten or eleven years, and we therefore think it rather a violent assumption on counsel's part to assume that these matters have been so definitely fixed as they claim for one hundred years.

As in our original brief we again insist that the evidence is conclusive that these waters are in fact a part or an arm of Lake Superior, and are not a part of the St. Louis River. We believe that the evidence and our argument is so conclusive upon that proposition that Wisconsin counsel were unable to make a respectable argument to the contrary.

Briefly, to call attention again to the evidence and arguments supporting that proposition:

(1) It appears without dispute that the waters of Lake Superior and not of the St. Louis River *are absolutely dominant* at the boundary line in question.

(2) That the waters all along this line are of the same identical level as the waters of the Lake and it stands undisputed that *if the water coming down the St. Louis River should be diverted or dried up, the waters in these bays would still remain at approximately the same level they now are.*

(3) That the oscillations and changes in the lake surface affect these boundary waters as far as the westerly end of Big Island, but not substantially above that point.

(4) That the waters in these bays and along this boundary flow in both directions, and their movement is not always in one direction, as in the case of a river.

(5) That the waters of these bays are subject to the ebb and flow of the true tide of the lake.

(6) That the waters of all of Lower St. Louis Bay are a broad expanse of nearly uniform depth, with no line of deepest water. The waters of Upper St. Louis Bay are likewise a broad expanse of somewhat more varying depth, but with many channels and lines of navigation, having more the characteristics of an end or border of a lake than of a river.

(7) That such currents as there are in these bays are found mostly at either end of the bays and are due to the action of the water when forced up or down through the narrow openings, just as is the case where there is a narrow water connection between two lakes. They are lake currents, flowing at times in *opposite directions* rather than river currents flowing in *one direction.*

(8) That the physical characteristics of the shores of these waters are those of a lake and not of a river. That there are no well-defined banks; that the shores are full of large indentations and bays and are distinctly different from the well-defined banks of the St. Louis River westerly of Big Island. That the contour of the shore of the western end of Lake Superior is that of a

body of water gradually narrowing to a point, and that this contour brings this point approximately at Big Island and not at all between Wisconsin and Minnesota Points where the width of the lake is still eight or nine miles.

(9) That the three pairs of points projecting from opposite shores, were, according to scientific evidence and the evidence of tradition, formed *in the lake*, and that what was once a part of the lake must still be a part thereof, notwithstanding the formation of points projecting therein. That even under the theory advanced by Professors of Wisconsin University that these waters are "a drowned river", such river was drowned and obliterated ages ago *by the waters of the lake.*

(10) That from a scientific standpoint as well as a political standpoint, the mouth of the river is where the waters thereof cease to descend and reach the level of the waters of the lake and become a part thereof, and this point is at the head of Big Island.

(11) That all the maps in common use showing the state boundary, of which there are many, published from the earliest days down to the time this controversy arose, some published by authority of Wisconsin, some by authortiy of Minnesota, some by prominent citizens of Wisconsin and Minnesota, all, without exception, show the state boundary running through the center of these waters, midway between the shores.

(12) That the location of the mouth of the St. Louis River at the westerly end of Big Island answers every call in these acts of Congress in entire harmony with the language of the acts, and is according to the fact.

Acquiescence.

In the complaint in this case, Record page 6, it was alleged in substance that the submerged land between the north dock line and upland of Minnesota and all improvements thereon, have at all times been taxed by Minnesota and policed by the officials of the state, and both civil and criminal jurisdiction of said property has been had by the courts of Minnesota, and that none of these powers have been questioned prior to the year 1913, when Wisconsin attempted to tax across the Minnesota dock line, and the Wisconsin authorities prior to said time made no objection thereto or to the improvements, although they had full knowledge thereof.

On page 16 of the Record in the answer by Wisconsin is found this admission: "The defendant admits that the rights and powers exercised and assumed to be exercised, if any, by the complainant or its taxing officers, were not challenged by the defendant or its taxing officers prior to the year 1913." The answer then goes on to allege that Wisconsin, however, reserved the power to tax and that it had taxed the submerged lands as incident to the upland on the south shore, but it was distinctly admitted in the trial by the taxing officers, that they had never taxed beyond the dock line on the Wisconsin side prior to 1913, after the decision in the Norton-Whiteside case. Record pages 268, 287, and from pages 305 to 330 were exhibits 36 to 42 inclusive, showing a large amount of taxes paid on the Minnesota side.

The evidence shows no improvements have been made or attempted by the shore owners beyond the midway line from their respective shores. The maps published by authority of both states, for practically fifty years, show the boundary substantially midway between the shores. The numerous priavte maps published during the same length of time, likewise show the boundary line midway between the shores. The single map re-

ferred to by Wisconsin counsel on page 272 of their brief, being Wisconsin Exhibit 52, was made in 1914 or 1915 after this controversy had arisen, and immediately after the decision of the Circuit Court of Appeals in the Norton-Whiteside case, and undoubtedly was made simply upon the strength of that decision. On the other hand, Minnesota's Exhibit 50 was an official publication of the State of Wisconsin made in 1877 showing the state boundary through the center of these bays. From pages 51 to 63 of our original brief, this multitude of maps showing the state boundary line midway between the shores and published and in continuous circulation for fifty years or more, all speak in unison that it was a matter of common understanding that the dividing line was substantially midway between the shores.

Major Huston, who seems to have been the first engineer in charge of the harbor work, fixed the mouth at the point where the current ceases to be affected by the oscillations of the Lake in the neighborhood of twelve miles above Rice's Point (Record page 381), and the evidence shows that this point is at the head of Big Island. Whether this common understanding that the dividing line between the states was approximately midway between the shores arose because of the common understanding that the mouth of the river was not between Minnesota and Wisconsin Points, but was at the head of Big Island, or whether it arose because it was the common understanding that the main channel was approximately midway between the shores as Minnesota claims, is wholly immaterial, for in either event the common understanding that this is the boundary line has existed and been acquiesced in for this long period of time.

The fact that this common understanding has existed and been acquiesced in must be of far more significance than any mere giving of a name by some early explorer to some particular locality. This common understanding as to where the dividing line is, reflects the thought of myriads of people at a time when

the matter was a subject for consideration, while the giving of a name by someone attached to some expedition and without regard to the point in question, is only referred to by counsel in attempt to show the intent of Congress, but without any showing that the matter had been called to the attention of Congress.

The cases in this Court upon the effect of acquiescence are reviewed in our original brief from pages 70 to 74. It is unquestionably true that at the time these acts of Congress were passed, it had not been settled whether even in a river the dividing line between a state passed midway between the banks or followed some channel, and it seems not to have been definitely settled until the case of *Iowa s. Illinois*, decided by this Court in 1892, and even since that time it has been argued in this Court under certain circumstances, even as late as 1917, that in a river the boundary may run midway between the banks instead of through the navigable channel. *Arkansas vs. Tennessee*, 246 U. S., 158; Lawyers Edition, 639. And in June of this year (1919) the Court again discusses this question in the case of *Arkansas vs. Mississippi*, No. 15 Advance Sheets, Lawyers' Edition, page 507.

It would seem, therefore, that Congress could not have had in mind as definitely as Wisconsin counsel argue, the exact location of the dividing line between these two states, which it laid down when it used the words "main channel", even if it should be deemed that these waters are a part of a river, and it must necessarily have left this matter to be determined as the fact is, and as the meaning of the word should be finally determined.

The case of *Washington vs. Oregon*, 211 U. S., 127 has no bearing upon the proposition for there the Congressional act had clearly designated the boundary as running through a given north channel of the river. Whether the acquiescence and understanding of the parties arose through an understanding as to where the mouth of the river was, or through an understanding

as to where the navigable channel was, in either event, it should be of the greatest force in determining this question, and we submit should be conclusive under the evidence in this case.

Importance of Boundary Line and the Construction of the Acts of Congress With Reference Thereto.

The waters here in question constitute the harbor at the western end of all of the deep water navigation of the Great Lakes. Already, annually, there is floated in this harbor, a shipping tonnage which is at least a good second to the greatest shipping tonnage of any harbor in the world. There is now a serious movement in progress to so deepen the connections with the St. Lawrence River that undoubtedly in a comparatively few years, this harbor will be the western end of deep water navigation reaching across the Atlantic. The decision of this Court will fix for all time, so long as the government of the United States shall last the dividing line between these great Commonwealths of Minnesota and Wisconsin on the shores of the harbor. This Court has many times said and no better than in the case of *Arkansas v. Mississippi*, decided in June of this year, 1919, as follows:

> "It was specifically held in *Iowa vs. Illinois*, supra, and followed in later cases that the controlling consideration is that which preserves to each state, equality in the navigation of the river, and that in such instances, the boundary is the middle of the main navigable channel of the river."

It is absolutely inconceivable that Congress intended to first fix the mouth of the river outside of this great harbor, and then run a boundary line between these Commonwealths, which when

real commercial navigation developed, would give one state practically entire jurisdiction and control on its side of the main channel used in commerce, and also jurisdiction and control of a large part of the dock ends built from the shore of the other state. As we read the decisions of this Court, the intent and purpose of the Court has been in so far as possible, without doing violence to legal principles, to so determine the line that each state shall have sovereignty and jurisdiction to the channel commonly used in commercial navigation, as such navigation has naturaly developed. It certainly has never been the purpose or intent of this Court to so determine the line as to deprive one state of jurisdiction and access to the only practical line of commercial navigation and give another state jurisdiction on both sides of the channel which may be commonly used and developed for such commercial navigation. An inspection of any of the harbor maps which were introduced in evidence, for instance Minnesota Exhibit 3, will show that if the contentions here of Wisconsin should be sustained, it would result in twisting the state line in the form of the triplicate letter "S" around and across the main navigable channel, as it has been improved and developed in the natural and ordinary way by the federal government in the exercise of its reserved power to improve the waters in aid of navigation. If the Court deems these waters should be held to be a part of the river, it can be seen at a glance from these maps how inequitable and unfair such a line would be and into what endless confusion questions of taxation, jurisdiction and police power would be thrown if docks built from the Minnesota shore to reach the navigable channel, which is now, has been for more than twenty years and will be for all time to come, the main navigable channel, should be held to be in Wisconsin.

All this water front clear to the head of Big Island where we claim lies the mouth of the river, is being gradually put to use for dock purposes, and as commerce increases, it will all be developed and overcrowded. Unutterable confusion would exist

and unending disputes and litigation arise, if jurisdiction and the taxation and control of many of these dock ends and slips and the personal property, such as coal, iron, lumber and grain handled over them, should be vested partly in one state and partly in another.

Practically all, if not all the cases which this Court has decided to the effect that a state line was not changed by avulsion, have been cases where the matter involved was the sudden change of a river channel so that the dry land formed on one side of the main channel was thereby placed on the other side of the main channel. In practically all, if not all, of the cases decided by this Court which fixed a state boundary as through the main navigated and navigable channel of a river, the decision was made on the facts as they existed at the time of the determination by this Court, except where a different line was necessitated by an avulsion which so suddenly changed the course of the stream as to set off dry land on the other side of the stream.

In *Iowa vs. Illinois*, 147 U. S., 1, it was stated:

> "At the Keokuk & Hamilton Bridge, the channel used by steamboats *is partly artificial, constructed by excavation of rock from the river bed to facilitate the approach to the lock of the United States canal immediately north of the bridge.*"

In *Franzini vs. Layland*, 120 Wis. 72, 97 N. W. 499, the Wisconsin court considered these matters in the light of the decision in *Iowa vs. Illinois*, and, speaking of a boundary line in the Mississippi River, said:

> "The boundary line in question is not the center line of the Mississippi River, measuring from shore to shore, but

is the center line of the main channel of the river, the navigable and navigated channel, regardless of the distance thereof from either shore. It may be very near the Minnesota shore at some points and very near the Wisconsin shore at others, *according as the deep pathway used for steamboat navigation varies. It is not referable necesarily to the condition of the channel at the time the State was admitted into the Union.* It is a shifting line, subject, however, to property rights, the idea embodied in the enabling act permitting Wisconsin to come into the Union as a State being that there shall be at all times preserved within its boundary one-half of the main navigable channel of the river."

This court, in *Iowa vs. Illinois,* adopted the rule that the main navigated and navigable channel was the boundary line, and it has recognized that this line may from time to time vary so as always to permit each state to reach that navigated and navigable channel, even though the varying line is affected by government improvements in the aid of navigation. This central idea is recognized by the Wisconsin court in *Franzini vs. Layland,* above mentioned. Adherence to this main rule and the underlying reason thereof works justice between two states, in that within the water area, while the boundary line may to some extent shift, it is always where each state and sovereignty preserves its access to the main line of navigation. Inasmuch as under this rule the boundary line may from time to time vary to follow the main navigable and navigated line, it would result in untold confusion if, within the water area and entirely under water, it should be held that it may vary entirely from natural causes but shall not be affected at all by government improvements. The variation that necessarily does take place under water in the line of navigation is often affected partly by the force of the waters and partly by reason of improvements in navigation under the authority of the reserved power of the government to so improve. To what extent a variation in the navigable and navigated channel is affected by the one cause or

the other is usually impossible to determine, at any rate within and under the water area. So, in the present instance, while the government has dredged out the shoals generally along the main line of navigation, that line has necessarily at the same time been affected to a considerable extent by the force of the waters themselves. The main line of navigation may to some extent be determined also by the requirements of the character of the vessels generally using it—whether they be long or short, of deep or light draught, sailing vessels or steamboats.

We submit, even assuming for the purpose of argument only that these waters are a part of St. Louis River, and also assuming only for argument that the deep water channel was where Wisconsin contends, the rule ought to be that where as here the federal government under its reserved power to improve navigation, has simply straightened and deepend entirely within the banks and entirely under water, the navigable channel, that the boundary line should follow the channel so straightened and deepened. This should not be held a change or relocation of a navigable channel but an improvement of the navigable channel.

This would merely apply the doctrine of erosion and accretion in such case instead of the doctrine of avulsion. The doctrine of avulsion we conceive, originated and has been almost wholly applied in cases where by a sudden change in a channel to apply the other doctrine would be to transfer the title to a certain specific piece of land from one to another. The doctrines of erosion and accretion have been applied where the change was more gradual and imperceptible. Neither of these three doctrines is based upon the amount or the extent of the change, but rather upon the kind and character of that shifting.

Taking the present situation as an illustration, the rule ought at least to be, even on the aforementioned assumptions, that the term "main channel" of a river is so broad that any straightening out of the crooks and deepening in the ordinary

and natural course of improvement, so as to permit and facilitate commercial navigation, results in the adaptation of a state line to a channel so naturally and ordinarily improved, otherwise the underlying reason of the rule—access to navigation—is defeated the moment the practical line of navigation is made available. We do not contend, of course, that is the government should determine to relocate and to form an entirely new channel by going through dry land or property which it would be required to take under eminent domain, that this should change the title or boundary state or private of the dry land. We maintain, of course, that the main navigable channel through these waters, even if they be considered a part of the river, always was, for all practical purposes, approximately where the dredged main navigable channel now is, but even if it should be assumed that the line of deepest water at some time in the past had been where Wisconsin claims, still such a straightening out of the triplicate letter "S" as occurred here, should not be deemed a real change or relocation of the channel, but rather an improvement of an existing channel. A ship channel in these days is no hair breadth affair but is the broad general pathway where they pass each other and turn to enter slips and in a harbor go from wharfage on one side to wharfage on the other. In a harbor such as this which will anchor the shipping of the world and which will all be used in navigation the entire water the entire water area might properly be deemed the channel, if we must search for a channel. No harm could come from such a rule, but on the other hand, we conceive of no case where its application would not be equitable and would not work justice, limited to cases where it was a mere straightening out of crooks entirely under water. Even at the best, the channel claimed by Wisconsin was never fit for real commercial navigation such as there has been for the last twenty years, and will be at all times in the future. The crooks and bends in such channel in such line were entirely too sharp to accommodate the four hundred to six hundred foot, or

longer, steamboats that are in common use on the Great Lakes. At best, too, Wisconsin does not claim that there was more than eight and one-half feet of water in the channel, which, of course, was altogether too shallow to admit of real commercial navigation or to accommodate any more than logs or canoes or other very small boats. The main navigable channel in waters such as these should be held to be that which in the ordinary course of navigation would naturally be used and improved for all time to come. It should not be held to be a channel so crooked and so narrow that it would not accommodate or serve at all, the ordinary commercial traffic that would naturally develop at the locality. Even if as Wisconsin claims these waters should be held to be a part of the St. Louis River, still we maintain that the main navigable channel thereof, within the doctrine of *Iowa vs. Illinois* should be held to be that channel which would ordinarily and customarily be used by steamboats and other vessels in the ordinary and natural development of traffic, even though this ordinary, natural development involved some straightening and deepening to accommodate such ordinary traffic. The "main channel of navigation" cannot be one that is not navigated at all. We think this is in line with the acts of admission of states to the Union, which admission is subject to the reserved powe rof the federal government to make such ordinary improvements. This should not be held to be a changing or relocation of the main channel, but on the contrary should be held merely a development of the main channel. Such a rule conforms not only to, but extends to a logical result, the rule laid down in *Iowa vs. Illinois*, that the main channel is that channel, which under ordinary circumstances, would usually be taken by steamboats and other vessels. The matter of riparian rights and water boundaries is something that has to be decided on equitable principles so as to work justice as far as possible. Moving water is a great force in itself. It is not possible to lay down as hard and fast rules applicable either to water rights or water boundaries as it is in the case of land rights or land boundaries. We cannot conceive

that if in the center of a river otherwise navigable, there appeared at one place a large boulder or rock projection, which in the improvement of navigation would naturally be blasted out to permit vessels to pass over this spot, that when it was blasted out and its place became a part of the main line of navigation, it would still be necessary to go to the side and find where the water ran before, in order to determine the boundary. The same consideration applies to a shoal which is an obstruction to navigation. A natural line of commercial navigation does not forever go around every minor obstruction but makes its pathway in the most feasible, direct route and brushes aside little interferences. The pathway it naturally seeks and improves is the main navigable channel for the reason it is so sought.

This Court has in the recent case of *Arkansas vs. Tennessee*, 246 U. S., 115; 62 Lawyers' Edition, 638, distinctly laid down the rule that even in cases of avulsion, the boundary does not necessarily go back to its original place, but when the avulsion occurs it remains at the place to which it had shifted just before the avulsion, and this case reiterates the rule that where a channel is changed by erosion or accretion, the boundary follows the varying course of the stream. Where the rule has been laid down as it has been by the Court as to state boundaries that the purpose is to so run the line as to make it in the main navigable and navigated channel, we submit that it consistently and logically results that it should be held to follow such main navigated and navigable channel as has developed in the natural and ordinary course of travel. We submit further, that it is not necessary to hold that the main channel has been changed where all that has been done is to straighten and deepen entirely under water and within the banks the channel that would naturally be improved and navigated. On the contrary, it is not illogical or inconsistent to hold in such cases that the main navigable channel is and always was that channel which would be ordinarily and naturally developed in any real steamboat or vessel navigation. In the present case an inspection of the harbor map, Minnesota's

Exhibit 3 will show that the improved channel which now and for more than twenty years past has been used and always will be used, starts at Big Island and ends at Grassy Point, being at both ends at substantially the same places that Wisconsin maintains the channel to be. Not only this but it goes for all practical purposes in substantially the same line that Minnesota maintains has always been the line of navigation. The small islands shown were not islands in the original government survey and were partly formed by mere accretion and partly by dredging. They were within the original water area.

We submit that it does no violence to any legal principle to hold that the main navigable channel always was at approximately the location that the dredged and improved channel now is, midway between the shores, and that the only variation has been in straightening and deepening it in the natural and ordinary way for the puropses of navigation, and that the boundary line follows the channel so straightened and deepened.

Another line of reasoning which would lead to the same result is that if these waters should be considered neither as distinctly a part of the St. Louis River nor as distinctly a part of Lake Superior, but should be considered as a boundary lake or land locked sea, then the dividing boundary line would be held to run midway between the shores. In *Louisiana vs. Mississippi*, 202 U. S. 1, this Court says:

> "As to boundary lakes and land locked seas where there is no necessary track of navigation, the line is drawn in the middle and this is true of narrow straights separating the lands of two different states, but whenever there is a deep water sailing channel therein, it is thought by publicists that the rule of the thalweg applies."

This definition of a boundary lake where there is no necessary track of navigation, perhaps properly might be applied to

these waters for they certainly constitute a lake or arm of the sea, whether it be a part of Lake Superior or not, and it is true also that originally there was no deep water sailing channel therein, although there were numerous shallow channels, and the evidence shows that such craft as could navigate at all could go in almost any direction.

If there was no deep water sailing channel in the sense that term is generally used, and if such navigation as there was could and did go in almost any direction, then this fact shows that these waters were of the character to which the midway rule is usually applied, that is a boundary lake or landlocked sea. These waters are the kind of waters and have all the characteristics of waters to which this court has usually applied the midway rule. If, however, the main navigable channel rule is to be applied, it must be as that channel is developed when commerce arises and when commercial steamboat navigation develops. Where waters are actually navigable, it cannot be that the line would be held in one place if people were there to navigate but in another merely because the population had not yet arrived to develop navigation.

In *Washington vs. Oregon*, 214 U. S., 205; 53 L. Ed., 971, it appeared that the channels of the river had been affected by the flow of the water and by jetties constructed by the government to facilitate navigation and yet this did not prevent this court holding that the boundary varied as the channel varied from these causes. Logically, it should be immaterial whether the channel varies in the details of its general course because the government builds jetties which directly cause it to vary or because by dredging and straightening the water is inducted into the straight, shortest and best course. In *Iowa vs. Illinois*, as above noted, it was held that the boundary line was in the main navigable channel although in places this was artificial, caused by the construction of government locks and other improvements.

We, of course, do not admit for a moment that the line contended for by Wisconsin was over the main channel. The evidence is conclusive to the contrary. We do maintain that the main channel adapted to commercial navigation is and always has been for all practical purposes, approximately on the line where the government has improved it, midway between the shores. When the reason of the rule holding a main channel to be the boundary line is to allow each state access to the main channel of navigation for steamboats and vessels, it should be held that that channel is the one that in ordinary development and improvement by the government under its powers is mainly used for that purpose—not one that is so crooked as to be useless for that purpose. So long as the line which steamboats and other commercial traffic mainly follows is the natural and ordinary line within the limits of the water area, it should be held that the boundary follows that line and varies with it, whether the variation occurs through a shifting of the bed under water occasioned by the currents or by a shifting to dredge out shoals in straightening and improving the line for commercial traffic. When the reason of the rule is to preserve the boundary line for commercial traffic, it cannot be that when that traffic is naturally and ordinarily developed, the reason is cast aside merely because before that traffic really developed there had been some line of deepest water twisting around and across the shoals which was totally unfit for commercial traffic and where to develop real commercial traffic at all some improvement was necessary. The natural line and main channel for commercial traffic through these waters is clearly approximately where the government has improved it, midway between the shores, and all that has been done by the government should be deemed but a dredging out of shoals in this line. Nearly every body of water used in commercial traffic requires some improvement of the main channel of navigation. Where the improvement by the government under its reserved power is no more than to develop in the shortest or most available line that main channel entirely under water to accommodate vessel traffic, the boundary line should follow.

SECOND.

Assuming, for the purpose of argument only, that the waters to the westerly of Grassy Point and easterly of Big Island are river waters and not bay waters, the evidence establishes beyond a reasonable doubt that the state line is located in the "navigable and navigated channel", in so far as the disputed territory is concerned, far to the south of all dock property constructed on the Minnesota shore; if this position is correct the claims of the State of Wisconsin in this action are entirely defeated.

The brief submitted on behalf of the State of Wisconsin contains nearly two hundred and fifty pages on this point, and refers to many matters entirely outside the record. One theory after another is brought forward enthusiastically by counsel, only to be abandoned for another which is thought to support the claims of Wisconsin in this action. But all of the theories seriously argued by counsel for Wisconsin in this part of their brief are based upon one underlying thought, which, as will appear clearly in the discussion of those theories, is continuously urged in one form or another. That theory is briefly this: that the line of deepest soundings is the state line, without any consideration of the actual navigation thereon or elsewhere.

In view of the fact that the whole tenor of the argument submitted by counsel for Wisconsin on this point represents what we conceive to be a misapprehension of the law applicable to cases of this type, it seems proper at this point in our reply brief to state again what we believe to be the law as to the boundary line between states bordering on a navigable river. In so doing it is not necessary to go outside the cases decided by this court, and cases cited with approval by this court.

Undoubtedly this question, up to the decision in the case of

Iowa vs. Illinois, 147 U. S. 1, was more or less an open one. That case, decided in 1893, brought forth an exhaustive and critical decision, and the language of the opinion written by Mr. Justice Feild has become the starting point for all later opinions on the question. On pages 88 to 90 of our main brief the case is quoted at length. Our understanding of the law and substance of that case is briefly this: the old theory that the boundary line between states separated by a river is the *medium filum aquae*—a line drawn through the center of the river—is not applicable to cases in which the evidence shows that there is "a channel of commerce", "one usually followed", "a channel of traffic", "one which is best suited and ordinarily used" for the purposes of navigation,—in other words a navigable and navigated channel. In such cases the *channel of commerce* or the *navigable and navigated channel* is the boundary line between the states. The reason for this rule is stated by the court to be obvious, because *"the right of navigation is presumed to be common to both."*

Clear and decisive as the opinion in the case of *Iowa vs. Illinois* is, the point was reargued before this court in the case of *Arkansas vs. Tennessee*, 246 U. S. 158, decided by this court on March 4th, 1918, on the basis of a decision of the Supreme Court of Tennessee reaching a contrary conclusion. The opinion in that case, written by Mr. Justice Pitney, is a clear affirmance of the earlier doctrine and its conclusions:

> "The true boundary line between the states, aside from the question of the avulsion of 1876, is the middle of the main channel of navigation as it existed at the Treaty of Peace concluded between the United States and Great Britain in 1873, subject to such changes as have occurred since that time through natural and gradual processes."

The doctrine of these case was expressly reaffirmed in the

case of *Arkansas vs. Mississippi*, 15 Advance Opinions, 507, decided by this court on May 19, 1919.

The language used by this court in the cases cited clearly precludes the argument that the line of deepest soundings is controlling. In the case of *Rowe vs. Smith*, 51 Conn. 266, the court says:

> "The expression, 'middle of the channel, or bay, or harbor', does not refer to the thread of deepest water but to that space within which ships can and usually do pass."

The language last quoted is significant not only because it expressly repudiates the theory of Wisconsin in this case, but because it is quoted with approval in the Illinois case of *Buttenuth vs. St. Louis Bridge Company*, 123 Ill. 535, and this court, in the case of *Iowa vs. Illinois*, supra, cites the *Buttenuth* case with approval, quoting in the opinion the portion of the opinion in the *Buttenuth* case which includes the language of the Connecticut case.

It is respectfully and confidently submitted that the law of the instant case is well settled, and *does not depend on the line of deepest soundings, but on the "channel of commerce", "the channel of traffic", "the main channel of navigation"*,—in other words, the navigable and navigated channel.

The law being well settled, there would seem to be nothing remaining but to argue the facts applicable, and such is the method of presentation used in our main brief. But we shall reply to the sub-issues of law and fact sought to be injected into this case by counsel for Wisconsin—not because we deem those issues relevant in all cases, but because we cannot agree with counsel that the way to dispose of an argument that seems un-

sound to us is to refuse to "give any attention to the proof submitted or arguments offered" (Wisconsin Brief, page 371), and in so doing, for the court's convenience, we shall follow the general plan of arrangement used in the brief submitted on behalf of Wisconsin.

1. *The argument of counsel for Wisconsin that the problem before the court is to determine the state line fixed in* 1846, *is true only with some such limitation as: "subject to whatever changes therein that may have been caused, in the absence of avulsion, by subsequent variations in the navigable and navigated channel"; otherwise the argument is misleading, and ignores the holdings of this court.*

The decisions of this court which we have already cited show clearly that some such qualifying clause as that suggested must be added to the rule of law stated by counsel for Wisconsin. The rule is nowhere more clearly stated than by the Supreme Court of the state whose Attorney General now argues to the contrary, in the case of *Franzini vs. Layland,* 120 Wis. 72:

> "The boundary line in question is not the center line of the Mississippi river measuring from shore to shore, but is the center line of the main channel of the river, the navigable and navigated channel, regardless of the distance thereof from either shore. It may be very near the Minnesota shore at some points, and very near the Wisconsin shore at others, *according as the deep-water pathway used for steamboat navigation varies. It is not referable, necessarily, to the condition of the channel at the time the state was admitted into the Union. It is a shifting line, subject, however, to property rights, the idea, embodied in the enabling act permitting Wisconsin to come into the Union as a state, being that there shall be for all time preserved within its boundary one-half of the main navigable channel of the river.* This has been a subject of much consideration by the

courts in years past, and there is nothing in respect thereto left to be settled."

In their argument on this point counsel branch off from their main theory of the case to argue a somewhat novel proposition. It is that (as they put it), if there were two channels, which, for convenience, we shall call the Minnesota and Wisconsin channels, meaning the channels contended for by Minnesota and Wisconsin respectively, the case at bar presents the element of a deliberate choice by Congress of the Wisconsin channel. There can be no question that the evidence shows, assuming for the purposes of argument that there were two channels in 1846, that the existence of these channels could not possibly have come to the knowledge of Congress so as to present the element of a choice of channels. Furthermore this court, in the only case cited by counsel to support their theory in this connection—that of *Washington vs. Oregon*, 211 U. S. 127, *expressly and in so many words* distinguishes between the facts in that case and those cases where, as in the instant case, the words "main channel" are used. In the enabling act of the State of Oregon the words "north channel" were used. That description, as is clearly staeed in the opinion of this court, "implies that there was more than one channel and the middle of the north channel was named." The opinion then goes on to point out that there were two channels of the river at the time that Oregon was admitted into the Union, and refers to a sketch made in 1792 by Admiral Vancouver, showing both channels—a piece of evidence strongly analogous to the Bayfield map in the instant case—and says:

"The existence of the two channels clearly opened the way for a selection of one as the boundary, and the north one was adopted."

The distinction between that case and the instant case is obvious. That this court had such distinction in mind is shown clearly by the language of Mr. Justice Brewer in the opinion in that case, where, after citing the cases, including *Iowa vs. Illinois*, supra, which interpret words similar to those used in the enabling acts of Wisconsin and Minnesota, he says:

> "But in these cases the boundary named was 'the middle of the main channel of the river', or 'the middle of the river', and it was upon such a description that it was held that, in the absence of avulsion, the boundary was the varying center of the channel."

Clearly the doctrine of the case cited cannot help Wisconsin in the case at bar. As a matter of fact if its doctrine applies to the instant case at all, taken in consideration with the evidence in this case, particularly the Bayfield map (the only map of these waters in use prior to 1861) (Record, page 624), which disclosed only one channel, and that far removed from the property of the Minnesota shore owners that Wisconsin is desirous of acquiring in this action, such doctrine would lead to the conclusion that the Bayfield channel was once and for all chosen as the boundary line between the states, thereby completely defeating Wisconsin's claims to the property on the Minnesota shore.

2. *The line of deepest soundings is not the criterion as to the main channel either in the absence or presence of navigation, and, when (as in this case) the evidence clearly shows that navigation was not along the line of deepest soundings, that line has no bearing on the question of where the State Line is located.*

Counsel then get down to what is unquestionably the basis of their whole agument—that the line of deepest soundings con-

trols the location of the boundary line. To a purely technical man, and possibly to anyone who is not familiar with the decisions of this court on the question involved, the thought that the line of the deepest soundings was meant to be the state line, has considerable cogency. But when the decided cases and the broad principle upon which they are based are taken into consideration, that cogency loses its force. The words "main channel" have no limited and stilted meaning, but, substantially as stated by one of Wisconsin's greatest judges in the *Franzini* case, supra, embody the idea that there shall be preserved for all time to each state within its boundary one-half of the main channel of navigation. In the face of the compelling reasons that have settled this question adversely to the present contention of Wisconsin the very statement that the line of deepest soundings controls shows its utter inadequacy. A holding that the line of deepest soundings controls the boundary line between two states is to ignore every advance that the law has made in a hundred years in cases of this type, and to repudiate the fundamental theory which is the basis of the rule not only adopted by the courts, but which is essential if modern business is to be carried on. All of the cases which we have cited either expressly or by necessary implication repudiate any such theory. As pointed out Mr. Halleck in his Treatise on International Law: "the deeper channel may be less suited, or possibly unfit for the purposes of navigation", and it is the purposes of navigation necessarily, and even aside from the adjudicated cases, under modern conditions, that must determine the state line, unless one state is to have an insuperable advantage over the other—the sort of an advantage, in short, that Wisconsin is seeking to get in this action. The observation of Mr. Halleck above quoted applies vividly here, for, assuming for the purposes of argument that the deep water off Grassy Point could be called a channel at all, the evidence shows that prior to 1893, when the so-called deep-water channel was dredged, it was not suited for navigation, and subsequent experience has proved that even the dredged channel with

its many crooks and natural shoals was not suited for navigation —the result being the straightening of later years.

Counsel argue on page 136 of their brief on this point that subsequent experience cannot raise a presumption of the location of the state line in 1846. In view of the fact that they thereafter spend one hundred and fifty pages of their brief in discussing the evidence of subsequent navigation, we cannot think that this point is offered with any degree of confidence. Counsel's argument in this connection is based on a misconception of what the law is in cases of this type. Whether later usage raises a presumption of the condition in 1846 is beside the point. If there had been a navigable and navigated channel in 1846, and that channel had later varied, in the absence of avulsion, the boundary line would have been, in the language of Mr. Justice Pitney, in the opinion in the case of *Arkansas vs. Tennessee*, supra, "the varying center of the channel", the word "channel" being interpreted as the channel of commerce, or "the main channel of navigation". Such being the case, can there be any reason why subsequent navigation should not control, in the absence of a showing of avulsion, when there is no proof of navigation in 1846? Can it be that Congress, in using the words "main channel" in the enabling acts, embodied therein the right of access to the navigable and navigated channel in these cases in which navigation had already developed, and denied that right in the western states where navigation had not, at the time of the admission of the states to the Union, been developed? A very statement of these questions shows that they must be answered in the negative.

It is Minnesota's position in this connection that when navigation came to these waters that navigation determined the navigable and navigated channel. Whether this should be called a relating back, or be taken as based on the fact that conditions once shown to exist raise a presumption that they existed theretofore, does not matter. Any other rule than this would be

altogether subversive of the principles which, in cases of this type, have come to be controlling and basic.

Nor do the cases cited by counsel support their theory in this connection. The first is *Washington vs. Oregon*, cited supra in another connection. To prove that the state line does not vary counsel quote the following from the opinion in that case:

> "Does the boundary move from one channel to the other, according to which is, for the time being, the most important, the one most generally used?" (Pg. 136 Wisconsin's brief).

Of course subsquent use would not be determinative in a case when, as in that case, there were two distinct channels and one was definitely and in so many words designated by name as the boundary line between the states. The question asked by the court and quoted by counsel to support their theory was altogether relevant under the facts of the case in which it was used, but it can have no possible relevancy to the facts in the case at bar. Counsel again misunderstands and misapplies the doctrine of that case. As we have already stated, the cases in which the words "main channel" are used, are expressly distinguished in the opinion from the case therein decided, and the court goes on to say:

> "Now, if Congress, in establishing the boundary between Washington and Oregon, had simply named the middle of the river, or the center of the channel, doubtless it would be ruled that the center of the main channel, varying, as it might, from year to year through the processes of accretion, was the boundary between the two states. That Congress had the propriety of such a boundary in mind is suggested by the terms of the act establishing the territorial

government of Washington, passed March 2, 1853 (10 Stat. at L. 172, 90), in which 'the middle of the main channel of the Columbia River' was named as the boundary. However, as we have seen, when Congress came to provide for the admission of Oregon (doubtless from being more accurately advised as to the condition of the channels of the Columbia River), it provided that the boundary should be the middle of the north channel."

This case came up on a petition for rehearing, and counsel for the State of Wisconsin cite the opinion of this court in denying the petition for a rehearing as the second case supporting their theory in this connection. The opinion in that case, which is also written by Mr. Justice Brewer, is directly in line with the conclusions of the original opinion, and supports the contention argued for by Wisconsin no more than does that opinion.

The case of *Davis vs. Anderson-Tully Co.*, 252 Fed. 681, also cited by counsel in this connection, was one in which there were thousands of acres between the new and old channels, a situation which, whether that case be considered as one of involving avulsion or not, shows its inapplicability to the instant case.

Then counsel return again to their main theory that the line of deepest soundings controls, and they cite a statement from the book of Dr. Twiss, introduced by a qualifying phrase of their own, in support of their contention. The book cited is not available to us, but the rule that the deepest channel is the mid-channel for the purpose of territorial demarcation obviously can have no application to a case where, as here, the words "main channel" were used, those words having, under the authorities, a well defined meaning.

Counsel say that the language of Dr. Twiss was quoted with approval by Mr. Creasy in his First Platform on International

Law. They do not, however, add that Mr. Creasy goes on to say, with reference to the very point involved in this case:

> "It has been stated that, where a navigable river separates neighboring states, the *thalweg*, or middle of the navigable channel, forms the line of separation. *Formerly a line drawn along the middle of the water, the medium filum aquae, was regarded as the boundary line; and still will be regarded prima facie as the boundary line, except as to those parts of the river as to which it can be proved that the vessels which navigate those parts keep their course habitually along some channel different from the medium filum.* When this is the case, the middle of the channel of traffic is now considered to be the line of demarcation." (Pg. 223).

The rule stated by Mr. Creasy is obviously fair. Such would be the rule if the stream were non-navigable, and, in the absence of navigation there is no reason why a line through the middle should not be considered as the boundary line between the states; but when navigation comes the words used by Congress *must be interpreted to give to the shore owners on each side a right of access to the navigable and navigated channel.* Any other conclusion would be entirely out of line with the theory of law upon which the decided cases have been based, and would prevent the very thing that the cases say is meant by the use of the words "main channel".

No adjudicated cases are cited by counsel to show that, either in the presence or absence of navigation, the line of deepest soundings controls the position of the state line. We venture the opinion that no such cases exist—at any rate not since the case of *Iowa vs. Illinois* was decided.

The case of *Reynolds vs. McArthur*, 2 Peters, 417, cited by counsel, is not in point. The question there, so far as here rele-

vant, was whether the branch of a river in whose channel water might be found farthest from the mouth of the river, is the main branch of the river. A quotation from the opinion out of which counsel have taken the part of one sentence that they quote, clearly shows its irrelevancy in this case:

> "If neither branch had notoriously retained the name of the river, the main branch is entitled to it. But the main branch is not necessarily that in whose channel water might be found at all seasons of the year, at the point farthest removed from its mouth. The largest volume of water is certainly one indication of the main stream, which does not necessarily accompany that which the counsel for the palintiff in error has selected as the sole criterion by which it is to be determined. The length of the stream is another. It is obvious, that two branches may pursue such a course that the source of the longest may be nearer the mouth of the river than that of the shortest."

We have no quarrel with counsel's theory that the condition as to deep water disclosed by the Meade map is presumptively similar to that in 1846, nor do we disagree with the cases cited by counsel in this connection. The somewhat misleading quotation on Page 140 of Wisconsin's brief from the case of *United States vs. Hutchins*, 252 Fed 841, 845, is clarified when it is stated that the Arkansas River was non-navigable at the point involved in that case, a fact which appears clearly in the opinion. There can, we think, be no question that there is a presumption that the deep water shown on the Meade map was substantially the same in 1846. By the same reasoning, if the navigable channel, as disclosed by later navigation, is once shown to exist, there would be a presumption that such was always the navigable channel; the rule in both cases being founded on the necessity of the case. We do not conceive that this action is to be decided by presumptions in any case however. Under the rule of the

adjudicated cases as to the "channel of commerce", or the "main channel of navigation", this type of presumption can have but little or no weight, in that the exact line varies with the line of navigation.

The Meade map, next referred to by counsel for Wisconsin, does not purport to be a survey of the boundary line between the states, nor even a determination of the main channel, as that question then (32 years before the decision of the case of *Iowa vs. Illinois*) may have been considered. That map, made under the direction of George C. Meade, then a Captain of Engineers, shows the soundings taken, those soundings being indicated by the usual contour lines in the original map and by dotted surfaces in the projected map. Copies of both the original and projected maps are in evidence.

Counsel's idea that the Meade map is a delineation of the State line, or even an expression of Captain Meade's idea of the main channel, is borne out by nothing in the map. Indeed, the only reference to a channel on the map is contained on sheet 2 thereof, this reference being significantly absent from sheet 1, *and sheet 1 includes all the waters now in dispute.*

Counsel's argument as to the Meade map is simply a circuitous re-statement of their basic premise that the line of deepest soundings represents the boundary between Minnesota and Wisconsin. If such were the law the Meade map would have great relevancy, but that such is not the law is well settled by the authorities. If a map showing depth contour lines only may be said to indicate a channel at all, in the sense that word is at issue here, the Meade map shows three possible channels, as we stated on page 92 of our main brief, one of them being the channel contended for by Minnesota, and another the channel contended for by Wisconsin.

The Meade map shows that the channel contended for by

Minnesota is broader, considerably shorter, straighter, and has a more uniform depth than the Wisconsin channel; and that the Wisconsin channel is more narrow, longer, more sinuous and has a more varying depth. The Wisconsin channel is shown to contain deeper water in some parts (the argument returning again to the sole basis of Wisconsin's claims), but the Minnesota channel does not show less than eight feet at any place, and usually is ten or eleven feet deep. The Wisconsin channel contains a bar which is usually referred to in the record and brief as being at point "C". This bar is referred to by Minnesota's witnesses as being one of the causes of the fact that navigators did not follow the so-called Wisconsin channel. It is our position that these differences, all of which appear on the face of the Meade map, disclose a physical situation which supports thoroughly the testimony of Minnesota's witnesses that navigation was in the Minnesota channel rather than in the channel contended for by Wisconsin. It requires little argument to prove that a navigator would, if sufficient depth were available in either of two channels, choose the one that was broader and shorter, particularly when there is a bar in the longer channel that might (and sometimes did; see testimony of John H. Norton, Record, page 275) prevent the passage of even light draught boats. When these considerations are viewed, together with the testimony of practically all of the captains who navigated these waters prior to 1895, the Meade map serves only to support Minnesota's case.

With the Meade map as a basis the sole remaining question would seem to be which of the channels indicated by the contour lines of that map came to be used as the channel of commerce, or the navigable and navigated channel. But counsel argue at great length with reference to other and later maps. We shall consider these maps and counsel's citations relating to them, but we respectfully submit to the court here and now that the vital question in this case is not what a map's contour lines may indicate to be the deepest water, or what an engineer or explorer may designate as the channel or even the main channel, particu-

uarly in the absence of any evidence that in so designating such channel he knew of, or appreciated the criteria which form the basis of the rules of law applicable, and we further submit that such maps, in the face of evidence that the actual line of navigation was at another place, should have no force whatsoever. Maps showing the state line as such, if they are shown to have had a general circulation, of course are relevant on the question of acquiescence in the line designated therein, but maps which, either expressly or by inference, purport only to show either the "channel" or the "main channel" have little, if any, weight. This is necessarily so, for the statements in those maps are unsworn and not subject to cross examination; and is particularly true as to those questions the determination of which depends upon a more or less intricate proposition of law, and one which, as is true here, was unsettled at the time the maps were made.

This court, in the case of *Missouri vs. Kentucky*, 11 Wall. 395, had this to say concerning the relative weight of maps as opposed to oral testimony:

> "But it is said the maps of the early explorers of the river and the reports of travelers prove the channel always to have been east of the island. The answer to this is, that evidence of this character is mere hearsay as to facts within the memory of witnesses, and if this consideration does not exclude all the books and maps since 1800, it certainly renders them of little value in the determination of the question in dispute. If such evidence differs from that of living witnesses based on facts, the latter is to be preferred. Can there be a doubt that it would be wrong in principle to dispossess a party of property on the mere statements—not sworn to—of travelers and explorers, when living witnesses, testifying under oath and subject to cross examination, and the physical facts of the case, contradict them?"

In other words, even though the maps referred to by counsel for Wisconsin were all that Wisconsin claims for them, they

would have little relevancy when opposed by oral testimony to the contrary, particularly when that oral testimony, as in this case, is not only preponderant, but as nearly conclusive as can be imagined in cases of this type. As a matter of fact the other maps referred to support Wisconsin's theory little more than does the Meade map.

The Bayfield map has been referred to in our main brief, as well as heretofore in this brief. On page 147 of Wisconsin's brief counsel say that our position concerning this map is somewhat beyond their powers. We of course are not responsible for any limitations on the powers of counsel—but we reiterate that the Bayfield track survey, if taken as the state line, will completely preclude Wisconsin's claims in this action. And the Bayfield map, as the evidence shows beyond any doubt, was the one and only map of the disputed waters that the early settlers had, and is different from the later maps in that it delineates an actual course of travel, thereby coming nearer than do any of the later maps to the very thing that has, by the decisions of this court, become the crux of the question at issue here. Furthermore, in 1846, at the time Wisconsin was admitted into the Union, the knowledge derived from this map was the only knowledge of a channel in the disputed waters that Congress had or could have had. The Bayfield map was not made from a survey, but was a free-hand drawing, and clearly shows on its face that all the surveying done was in the channel. In other words this was a practical chart of the navigable and navigated channel for the early settlers. It serves to show clearly and beyond any doubt that counsel's argument that Congress designated the deep water off Grassy Point as the main channel of the St. Louis River cannot possibly be correct, for the Bayfield map was the only map showing a channel that could have come to the attention of Congress in 1846, and that map did not disclose even the existence of the so-called Milford channel. The Bayfield map, when considered in connection with the oral testimony offered in this action, goes far to prove Minnesota's case; and completely

disproves the theory of Wisconsin that Congress intended in 1846 to designate the Milford channel as the boundary line between Minnesota and Wisconsin.

Then counsel insert in their brief a map by David Thompson, not in evidence. The use of this map illustrates well the exigency of Wisconsin's case, and offers a typical example of the inadequacy of maps compared to oral testimony. That map contains dotted lines close to the Minnesota and Wisconsin shores through Superior Bay (including Duluth harbor) and upper and lower St. Louis Bays. One can only conjecture what these lines mean, but counsel think they mean the course of traffic. Inasmuch as the line along the Minnesota shore is close to Grassy Point in the disputed waters, counsel find it easy to conclude that this is the main channel and hence the state line. The court will note that this "channel" hugs the Minnesota shore throughout lower St. Louis Bay and Superior Bay, including Duluth harbor, in places where even counsel admit the main channel never was and never could have been. If the dotted line on the Thompson map is the main channel, Wisconsin owns practically all the dock improvements on the Minnesota shore, aggregating in value possibly hundreds of millions of dollars, and boats entering the Duluth Ship Canal must cross the state line twice to get as far as Rice's Point. If counsel's argument as to the Thompson map is carried to its logical conclusion it leads only to the obvious absurdities last above stated. Even a casual examination of this map shows that it is inaccurate as to the physical aspects of the shores, and the dotted lines probably represent nothing more than a portrayal of an investigation of the shore lines of the two states. This map has no possible relevancy, and we submit that it has no proper place either in the record or in the argument of this case.

Counsel then argue that the fact that certain early explorers said that the channel was crooked and generally deep means that they had the Milford channel in mind. The description cited

would apply equally well to the channel contended for by Minnesota, owing to the general line of the bed of the river and bay. Counsel's point in this connection is pure conjecture based upon a desire to seize upon any possible ground to support Wisconsin's case.

Then counsel discuss another so-called presumption, viz: that the main channel ordinarily conforms to the course of the curving shore line. Whatever the presumption may be, that presumption falls in the face of oral testimony to the contrary, and in the face of the peculiar physical situation disclosed by the Meade and other maps. This point is but a re-statement of counsel's theory that the line of deepest soundings controls the location of the state line, and falls with the main premise upon which it is based.

3. *Evidence of navigators nearest in point of time to* 1846 *is not necessarily decisive.*

Counsel then fall back on their second line of defense. They abandon for a time, their idea that the line of deepest soundings controls, and argue that evidence of navigation nearest in point of time to 1846 would be decisive, regardless of the line of later navigation. In view of the fact that counsel would limit a consideration of navigation, in this connection, to times prior to 1870, this portion of Wisconsin's argument may be conveniently and properly referred to as their 1870 theory, as distinguished from their 1846 theory.

We believe that the testimony of the witnesses counsel refer to in this connection is best taken up in discussing the oral testimony as a whole, and we shall therefore take up this testimony there. The testimony relied on by Wisconsin in this connection is far from proving their point, as will appear in our discussion

of that evidence, but for argument's sake we shall assume the point. Putting counsel's theory in concrete form, if the main channel of navigation prior to 1870 is shown to be in a certain line, that line is fixed and settled as the state boundary line, regardless of what may follow thereafter. Counsel's rule, even granting that they have proved the fact upon which it is based, is impossible and ignores the fundamental theory of law applicable to state boundary cases. We venture the idea that the rule that has come to be adopted by this court is based not only on sound principles of law, viewed from a historical standpoint, but as well upon the necessity for the proper and fair development of modern business in both states along a navigable boundary river. Counsel here move up from 1846 to 1870, but the line here, too, must be fixed and immovable. In answer to this theory we have only to re-cite the cases decided by this court holding that the boundary line is the "main channel of commerce", the "varying center of the channel", the idea being, as stated by Wisconsin's own Supreme Court, that each state shall preserve within its boundaries one-half of the navigable and navigated channel of the river. Counsel's argument in this connection would lead in many cases, as here, to the utter stifling of business developments along the shores of two states bounded by a navigable river, and cause the very thing that the cases say is to be prevented, the removal of right of access to the channel that is actually navigable and navigated.

4. *The surveys and records referred to under Wisconsin's fourth point do not purport to show the state line, and have no real relevancy in the question involved in this action.*

Counsel then abandon their 1846 and 1870 theories, and use fifty pages of their brief in an attempt to show that the Corps of Engineers of the United States Army, in the characteristic language of counsel, "has settled the question before the court". Indeed, in their enthusiasm and satisfaction with their argument they claim that the report of the Chief of Engineers for 1885,

with the maps therein referred to, alone should settle the controversy in Wisconsin's favor. That year was eight years prior to the decision of this court in *Iowa vs. Illinois*, 147 U. S. 1, and nearly thirty-five years before the decision of this Court in the case of *Arkansas vs. Tennessee*, 246 U. S. 158, which finally settled beyond all question that it is the channel of commerce that determines the boundary between states bordering on a navigable river. It would seem strange indeed that a map made in 1885 should have determined a question based on a point of law which has been finally determined by this court only a few years ago.

To one at all familiar with the purpose and practice of the War Department, particularly the Corps of Engineers, the argument that that branch of the army could or would attempt to settle a disputed boundary line between two states of the Union is impossible on its face. We agree with counsel for the State of Wisconsin as to the ability and integrity of the Corps of Engineers; in fact that ability and integrity would preclude the very thing that counsel contend for.

Counsel refer to several matters introductory to their discussion of the maps of the Corps of Engineers. Their statement on page 169 of their brief that there was no avulsion prior to 1893 is of course true. Their statement that Minnesota is committed to the proposition that the main channel of commerce in 1893 was the one employed as such channel from 1846 on, is misleading. The evidence shows that from the beginning of navigation, the channel contended for by Minnesota was the main channel of navigation, but, whether that channel may have varied from year to year does not matter, under the holdings of the decided cases. The rule is not arbitrary; the line may and does vary as the channel of navigation varies, in the absence of avulsion. In other words, counsel's proposition here must again be qualified by the limitation set forth in the decided cases.

Neither the Lake Survey Bulletin for 1893, nor the Stuntz

map referred to by counsel offer anything of value toward the solution of the problem involved in this case. The description of the bulletin referred to does not purport to locate the main channel of the river, nor the state line, and would apply as well to the Minnesota channel as to that contended for by Wisconsin. The question is not what route would be taken by a strange mariner, "undertaking to navigate these waters equipped with the survey chart", but what route the men who did the navigating of that day followed, and on this point Minnesota has produced practically every captain who navigated these waters.

The Stuntz map is drawn from a survey "of an island in the St. Louis River", and does not purport to indicate the state line. The map was made in 1894, and the survey apparently was made when the dredging was being carried on (Wisconsin's Brief, page 174). Even if the almost impossible assumption is made that, in placing the words "main channel" on the map referred to, Mr. Stuntz had in mind the criteria of a main channel as a boundary line between two states, the making of the map after the dredging of 1893, and the survey while that dredging was in progress, clearly leads to the inference that it was the dredged channel that Mr. Stuntz had in mind. The difficulty here, as in all cases where maps not purporting to show the state line are used, is that the relevancy of this map depends on inference and conjecture. We cannot believe that the court will decide this case on any such basis.

The delineation of the "main channel" as the principal feature on a map of a small island by Mr. Stuntz calls to mind the testimony of Leonidas Merritt concerning the Stuntz survey above Fond du Lac:

> " * * * George Stuntz told me he moved up the river as far as he could get with a canoe up there where the line was run between there so as to get as much as he could in Wisconsin.

Q. Who is George Stuntz? A. He is an old settler.

The Commissioner: Stuntz is dead?

The Witness: Yes.

The Commissioner: Go ahead and tell what he said to you.

Mr. Owen: We object to it as hearsay.

The Witness: He said—he told me he was living in Wisconsin and he went up the river as far as he could with a canoe before he started that line down." (Record pg. 96).

Except as a matter of pure conjecture, and a basis for a long drawn out argument, the Stuntz map has no relevancy one way or the other in the instant case.

Then counsel come to their references to maps made by the Corps of Engineers, and the reports of the Chief of Engineers in which those maps were used. Some of these maps are in evidence; others are imported for the first time into the argument in the brief of counsel, as are all of the Engineer's reports to which counsel refer. We have already stated the extent to which counsel for Wisconsin rely on these maps and reports, and find our only excuse for discussing them because of that reliance. For this reason we have gone into each and every one of the maps and reports cited by counsel in this connection fully and in detail, and we beg the court's indulgence in discussing a phase of this question which we believe to be altogether irrelevant.

Our conculsions from these reports and maps are as follows:

None of the reports or maps cited by counsel for Wisconsin purport to show the boundary line between the State of Minnesota and Wisconsin. A careful consideration of these reports and maps shows their understanding of a channel, so far as a channel is referred to at all, to have been based upon the fact of deepest soundings. The words "main channel" were used in one map, and immediately thereafter removed from all subsequent maps

of the Corps of Engineers; and were used in the reports only by Mr. J. H. Darling, one of the witnesses for Wisconsin in this case, and his testimony clearly shows that he did not have in mind at any time the criteria of a channel or a main channel as the boundary line between states, as those criteria have been settled by the decisions of this court.

If it had been the intention or even general understanding of those who made the maps, that these maps delineated the boundary line between Minnesota and Wisconsin, it seems very clear that there would have been some designation of a line as the boundary in at least some of the maps referred to. Such a designation, if made, would be binding only on the theory of acquiescence, if the designated line were in fact different from the main channel of navigation. Even if such were the case the maps of the Corps of Engineers necessarily do not have the probative force of the maps in general circulation showing the line contended for by Minnesota, not as deep water or as *a* channel or *the* channel, but as the boundary line between Minnesota and Wisconsin. But in the maps made under the supervision of the Corps of Engineers there is a total absence of any such designation.

Counsel's attempt to connect up the Parkinson map of 1885 with the boundary line is absolutely without foundation, and is based on the clearest kind of specious argument. This map, which is the one that is enthusiastically referred to as being determinative of the issues of this case, purports to be a "map of Saint Louis River and Bay", and contains no reference to actual navigation. The deepest water, as is usual on maps of this type, is shown by contour lines. From this counsel assume that the line of depest water must have meant the main channel, and from this they find it easy to make the further assumption that the theoretical main channel so determined is the state boundary.

Nor does the report submitted with this map help out the

case of Wisconsin. The relevant portions of that report are as follows:

> "From the head of Saint Louis Bay to Fond du Lac, near the first falls, a distance of about thirteen miles, the river is tortuous with shoals, as well as narrow and deep channels." (Report of Chief of Engineers, Part 3, 1885. page 1961).
>
> "From this point the sixteen foot curve again commences, the channel running nearly south, with increasing depth, rounding Grassy Point *and finally merging with the channel of the river near 'The Island.'* " (Id. page 1962).
>
> "From this point the channel runs nearly south with increasing depth, rounds the lower end of Grassy Point, then extends in a northwesterly direction nearly parallel to its west shore and then, *bending gradually to the west and south, merges into the channel of the river near 'The Island.'* (Id. page 1963).

This is the language which this court is asked to believe is meant to be a statement of the boundary line between Minnesota and Wisconsin in the St. Louis River. As a matter of fact it proves only what the map shows, that above Grassy Point there are shoals as well as narrow and deep channels. The only part of the report that is relevant to the issues here is the statement therein that the channel above Grassy Point "merges into the channel of the river near 'The Island,' " a statement that shows a clear understanding of the persons who made the survey that these waters were not part of the river at all. Obviously men who believed that the so-called channel along the north side of Saint Louis Bay merged with the channel of the river near Big Island could not have intended to have marked that channel along the north side of the bay as the boundary between Minnesota and Wisconsin in a course and through waters which they did not even consider to be in the Saint Louis River, and yet counsel contend before this court that this survey is "an author-

itative delineation of the location of the identical line whose whereabouts has occasioned the present controversy." (Page 180 Wisconsin's Brief.)

The Parkinson map and the report of the Chief of Engineers for 1885 show two things and no more: (1) that there was deep water off Grassy Point; (2) that the engineers in charge of the survey agreed with Major Huston that the river's mouth was at Big Island. The first will not help Wisconsin; and the second, if the court finds in line therewith, will determine this case in favor of Minnesota.

The 1886 and 1887 reports contain maps which are partial reproductions of the Parkinson map, with additions in wording but without any new soundings or investigations having been made, as appears on the face of these maps. In the first of these, someone in the engineer's office apparently considering that the line of deepest water was the "main channel" so designated it, though there is no ground for arguing that the words "main channel" used on that map had anything to do with the main channel of navigation, which, by the law, constitutes the line between the states. It is extremely significant that on the 1887 map the words "main channel" are replaced by the word "channel". In view of this change *away from* the wording of the Enabling Acts it is a reasonable assumption that such change in wording was to avoid the very thing that counsel is now contending for. At any rate it is very clear that the words "main channel" would not have been changed on the later maps if the purpose of those words had been to mark the State line. It is also significant that the words "main channel" appearing on the map of this one year do not come back on any of the later maps in the reports of the Chief of Engineers.

The reports of the Chief of Engineers to which counsel refer at great length serve only to show that the appellation "channel", and for one year, "main channel", on the maps, so far as

the waters involved in this action are concerned, probably meant only the place where the deepest water was located, and certainly were not meant to constitute the state boundary.

The reports prior to 1885 have reference to water some distance from the locus of this case. The 1885 report has already been discussed, and, as we look at the matter, suports Wisconsin's contention not at all. The 1886 and 1887 reports have also been commented upon in connection with the maps appended thereto. They offer no relevant facts except those appearing on the maps.

On page 184 of their brief counsel for Wisconsin say that the memorandum of the Duluth Chamber of Commerce, to which they there refer, did not protest against "the location of the channel which had been denominated as the boundary between Wisconsin and Minnesota." The evidence is clear beyond all peradventure that there was no such designation ,and we cannot see how its repetition does otherwise than merely prolong a discussion already long. As a matter of fact, the only thing that memorandum contained concerning the waters in question was a reference to the "deep water" near Grassy Point. Apparently the then current idea of the Grassy Point situation is that there was "deep water" there, which once again brings back Wisconsin's premise that the line of deepest soundings controls the location of the state line, a premise which we believe we have shown to be fundamentally unsound.

The 1887 report of the Chief of Engineers contains no matters relevant to this case. The 1888 report shows that the engineers then had the same idea as the Duluth Chamber of Commerce. The channel referred to in the third paragraph of page 184 of Wisocnsin's brief is not to connect up with the *main* channel of the river at Grassy Point, or even with *a* channel thereof, but simply with "the deep water of the Saint Louis River at Grassy Point."

Two letters of the Duluth Chamber of Commerce are appended to the 1888 report. One refers to the waters in question as "the deep water at Grassy Point"; another to the "deep water channel above Grassy Point". The letter of the West Duluth Land Company, also referred to by counsel, refers to the "deep water at Grassy Point". These are far from a recognition of the "deep water" referred to so many times as the main navigable and navigated channel of the river. It requires no argument to prove that the fact that the Duluth Chamber of Commerce regarded a certain place as deep water would not make that place a part of the navigable and navigated channel of the river, nor would it indicate that the members of that organization thought such to be the fact.

Counsel make much of the fact that the first dock lines through the disputed waters, established in 1890, substantially followed the Milford channel, their theory being that this was a recognition of that channel as the boundary line between the states. By the same method of reasoning the establishment of later dock lines not along the Milford channel would indicate that that channel was not regarded as the state line. When the 1890 dock lines were established undoubtedly the dredging of several years later was contemplated, and it was only natural that those lines should follow the channel which was to be made by the dredging. As a matter of fact every one who is at all familiar with the developing conditions of a new country knows that the boundary line is not ordinarily taken into consideration in establishing harbor or dock lines. It would be strange indeed, if the 1890 dock lines were meant to be a delineation of the state line, that the 1894 and all subsequent dock lines completely ignored such delineation.

Within four years after the 1890 dock lines were established they were found to be inadequate, and the report of Major Clinton B. Sears, dated November 10, 1894, asks that new dock lines be established through the waters in question. These

proposed dock lines are indicated on Wisconsin's Exhibit 40, and the Minnesota line cuts over the so-called Milford channel at two places, while the Wisconsin line is far removed from the disputed waters. The report of Major Sears which recommends the new lines says: "The assumption in the matter of harbor lines is that in time they may be solidly built up by wharves, docks and other structures."

It is inconceivable, if the Corps of Engineers had in mind that the dock line of 1890 followed the state line, that they would have recommended, within four years thereafter, a new dock line going beyond and ignoring the original line, and stated that such line might be "solidly built up by wharves, docks and other structures." The approving recommendation of Colonel Poe, the Division Engineer, in forwarding the report of 1894 to the Chief of Engineers is also significant:

> "Four years ago I was a member of a Board of Engineers directed to recommend harbor lines at Duluth and Superior, and it was then supposed that ample provision was made for a long time in the future. Experience shows that the extensive lines at that time adopted now require modification in some of their features and very material additions to meet the requirement of the present.
>
> Believing as I do that the locality is sure to be the site of one of our largest cities, and that its commerce will demand every facility that can be given, it seems to me wise to establish the line as indicated by Major Sears in these papers." (Report of Chief of Engineers, 1894, Part 4, page 2488).

It seems too clear for argument that if the board of which Colonel Poe was a member in 1890 thought that they were following or delineating the state line, he would not within four years have recomemnded the establishment of a line that ignored and departed from the line of 1890.

Then comes the survey under the River and Harbor Act of 1890. That Act provided for a survey to be made and the costs of improvements to be estimated at certain localities in the United States, including "Saint Louis River from Grassy Point in Saint Louis Bay to Fond du Lac, or the state line between Minnesota and Wisconsin." The reports quote the description used in the Act, and from this fact counsel would have the court believe that the survey was meant to be of the state line.. That this survey did not purport to be, and in fact was not either a determination or a survey of the boundary line between Minnesota and Wisconsin, except as the St. Louis River was such boundary, or in other words that the boundary line portion of the act was purely descriptive, is shown, (1) by an examination of the map of itself; and (2) by the testimony of Mr. Darling who supervised the making of the map.

We firmly believe that an examination of this map (Wisconsin's Exhibits 31E and 31F) by the court will lead to the conclusion that its purpose was only to show the outlines of the land, to indicate contours of the depth, and to determine whether or not the locality was worthy of improvement. It is inconceivable that a map made to show the boundary line would not contain any reference to such boundary line thereon. These maps do not even contain the voluntary statement of some of the earlier maps as to channels, but show simply the depth contour lines, in that respect being similar to the Parkinson map of 1885. In fact this map was at least in a great measure a copy of the Parkinson map, because, as is indicated on the map itself, the funds appropriated did not permit of a complete survey at that time.

There is no doubt that Mr. Darling thought that the Milford channel was the main channel. Indeed, his use of the words "main channel" in his 1891 report, and their absence in all previous reports, suggest that he may have been responsible for their presence for one year on the Parkinson map. But there is no suggestion in Mr. Darling's testimony that he thought that the

purpose of his survey was to determine the state line. That survey was shown to him (Page 605 of Record), and if the absurd theory of the present counsel for Wisconsin is correct, most certainly the fact that its purpose was to designate the boundary, if a fact it were, would have been brought out.

But even if the impossible assumption be made that Mr. Darling did have the State line in mind in his survey, his evidence shows that he had no comprehension of the things that enter into the determination of the "main channel" as those words are used to determine the boundary between states. His testimony in this respect is clear beyond question:

"Q. Now you never navigated these waters above Grassy Point yourself, did you? A. No, I have not.

Q. Referring to this Meade map Minnesota Exhibit 1, I want to call your attention to this red line marked on this map from A to G, G to B and B to C, which has deep water, not less than eight feet at any point, which you tell us was so in testifying about the Meade map Wisconsin Exhibit 46-C, now I want to state to you in the way of testing your confidence in your opinion ,that I think about twelve different navigators such as Mr. Merritt, the two Merritts, Leonidas and Alfred, Mr. John Howard, Ben Howard, Mr. Norton, Mr. Brewer, Captain McDougall and Captain Stevens testified that from the time they started to navigate up until the dredging was done of this bar to the north of the point marked C on this map, they invariably when they wanted to go up the river took the channel running from A to G, B to C, whether they went by the channel to the north of Big Island or whether they went by the channel to the south of Big Island, now do you know whether or not when those gentlemen testified that that is the way they invariably navigated those waters above Grassy Point, whether that is true or not? A. I wouldn't doubt their testimony at all.

Q. You would think these men would know more about the way they went than you would? A. Oh, yes, sir.

Q. You would agree with their testimony? A. Yes, sir.

Q. Yes. You are an office man and have been for years? A. Have been ,yes, sir." (Record, page 617).

Putting the matter in other words, Mr. Darling's idea of the "main channel" failed to take into consideration the very thing which, according to the decisions of this court, is one of the essential criteria of what a main channel is, when those words are used as designating the boundary between states. Mr. Darling was in the engineer's office in Duluth during the time the engineering maps so relied upon by counsel for Wisconsin were made, and seems in many ways to have been the leading man in that office during those years, at any rate the leading man there who was a continuous resident of Duluth, and yet his idea of the main channel ignores the basis of the rule that has become the settled doctrine of this court as to what is the boundary line in cases of this kind. We confidently submit that the testimony of Mr. Darling, showing as it does a total lack of appreciation of the fundamental essentials which constitute a boundary line between states, shows very clearly that the engineering maps are very slightly relevant on the question before the court, their relevancy being limited to just what they show—that there was deeper water in the channel contended for by Wisconsin (if the deep water off Grassy Point can be called a channel at all) than in the channel contended for by Minnesota, a conclusion which has not at any time been denied by Minnesota.

Counsel begin the next subdivision of their argument by this introductory statement: "Following Survey of State Line." There was of course no survey of the state line, and we reiterate that counsel's statement is unwarranted from the evidence in the case, or the many outside data that counsel have brought into their brief, is not true in fact, and is but an illustration of a method of argument that makes up in enthusiasm what it lacks in logic.

The reports of the Corps of Engineers from 1893 to 1904, next referred to by counsel, call for no comment on our part. Counsel here (page 208, Wisconsin's Brief) refer to the 1894 harbor lines, the establishment of which we have discussed supra. It may be possible that at one time or another an individual may have over-stepped his authority as an engineer, and made himself a judge of what constitutes the main channel of a navigable river between two states, or even the boundary line between those states, but it can hardly be that the same man, a Colonel of Engineers, would have determined the boundary at one place in 1890, and, four years later, expressely referring to the 1890 proceedings, have recommended a harbor line which went directly across that boundary line, and forwarded with his approval a report of his inferior officer to the Corps of Engineers, which report in so many words referred to the fact that the Minnesota shore owners might build up to the new line. Counsel use many pages in conjecturing what the Corps of Engineers meant or might have meant, but even counsel's facility in coming to conclusions will not get round this obvious impossibility.

The letter of Captain Gaillard to the Governors of Minnesota and Wisconsin, written in 1903 by a man who was first assigned to this district two years previously, has only the force that the point of view of an engineer of two years' experience at the place in question can have on an intricate question of law not then completely set at rest by the decisions of the courts, the determination of which necessarily depended largely, if not entirely, upon the testimony of navigators. Whatever force such an opinion may have ordinarily is lessened when, as here, it is shown conclusively that the navigators, if they had been asked, would have led Captain Gaillard to precisely the opposite conclusion, assuming of course that he knew the rules of law applicable.

We believe that our discussion of the earlier maps and reports of the Corps of Engineers shows that there was no attempt in those maps or reports to indicate the boundary line between Minnesota and Wisconsin. The only information that the

record shows that Captain Gaillard may have had on the question was the fact that the 1886 map and the 1891 report contained the words "main channel", but when it is taken into consideration that the wording of the 1886 map was changed immediately thereafter ,and that Mr. Darling's idea of the main channel was shown to be based on an entire ignorance of what the proper criteria of such a channel were, that information is of small effect compared to oral testimony. We have no hesitancy in saying that, in the absence of a showing that he understood the rules of law applicable, or had any information upon which he could have based a reasonable and logical conclusion, the letter of Captain Gaillard has no probative force in this case. Here, as at the beginning of our argument on the many extraneous matters brought into Wisconsin's brief in this connection, we state that it is impossible on its face that the Corps of Engineers should have even attempted to determine the boundary line between two states. That boundary line is determined by the main channel of navigation, and that navigators and not engineers are best qualified to testify as to navigation is vividly shown by the testimony of the one engineer that Wisconsin called at the hearing. As Captain Gaillard stated at the end of his letter: "This is a question which the War Department is without jurisdiction to decide", and, we may add that he, the last of the long line of engineers stationed at Duluth before the channel was finally straightened, was the only one who ever presumed to express an opinion on this question admittedly beyond their jurisdiction. We venture that seldom has the Corps of Engineers been argued to be the arbiter of disputed boundaries between states; and that only Wisocnsin's emergency in view of the oral testimony would have brought forth this argument.

Counsel then fall back to what may, in the language of modern warfare, be referred to as their "strongpoint". It is that the Wisconsin Boundary Commission of 1911 believed that the maps of the Corps of Engineers were decisive in Wisconsin's favor. There can be no question that the Wisconsin Commission relied

on these maps, but their ideas are hardly binding on Minnesota, and we believe that we have shown those ideas to be based on a misapprehension of the purpose and effect of those maps. Neither the maps nor reports of the Corps of Engineers, nor what the Wisconsin Boundary Commission thought of these maps, is going to determine this case, but it will be determined, as under the authorities it most certainly should, by the testimony of competent witnesses under rules of law that have been settled by this and other courts.

Counsel close their discussion on this point by a sharp criticism of our emphasis on a settlement that will do equity and justice, or, using the language they quote, "on a broad and practicable basis, so as to preserve to each state and the citizens thereof access to the navigable and navigated waters." We believe that the time has not come—and we venture never will come—when equity and justice will cease to have great weight in courts of law. And, as to counsel's vehement objection to the argument quoted last above, we can do no better than reiterate the very clear language of Wisconsin's Supreme Court in the *Franzini* case, quoted supra, that the idea embodied in the Enabling Act permitting a state bordering on a navigable river to come into the Union is that *"there shall be for all time preserved within its boundary one-half of the main navigable channel of the river."*

5. *The oral testimony is in line with Minnesota's theory of this case, and beyond all question shows that the so-called Milford channel was not the main channel of navigation, and therefore not the boundary line.*

We shall discuss together the fifth and sixth points argued by counsel for Wisconsin. The oral testimony has been fully brought to the court's attention in our main brief, and we would not deem it necessary to reply to Wisconsin's brief on this point in the case, were it not for the glaring misstatements in that

brief as to the actual evidence given, and the unwarranted inferences and conclusions that counsel for Wisconsin claim is established by the evidence.

Indeed, as to nearly every witness on whose testimony they comment (where they do not purport to quote the testimony verbatim), they in substance misstate the facts testified to by the witness on some important point, and conclusions are put into the mouths of witnesses, for which there is no foundation in the record of any nature or description, as we read that record.

In fact, the liberal use of language by counsel wherein they have garbled the testimony and have taken a fragment from the testimony of a witness here and another fragment there, and pieced these fragments together, and drawn conclusions therefrom, calls to mind the old saw that "Volubility is often times an enemy to thought."

It is true that counsel who have submitted the brief for Wisconsin took no part in the taking of the testimony, and neither saw nor heard a single witness testify, but that fact hardly accounts for the curious statements and curious manner of making statements found in their brief concerning the evidence, some of which statements will be called attention to hereinafter.

Counsel start out on this point by saying that the consideration of the problems of this action by the court may well end before considering the oral testimony, and, after reiterating their altogether fallacious conclusion that the Corps of Engineers has determined the boundary line between Minnesota and Wisconsin, they inveigh against what they call "the jumbled impressions of many witnesses as to what they did or saw, from a quarter to a half century antecedent to the making up of the record before the court."

There can be just one reason why counsel for Wisconsin object to the consideration by the court of the oral testimony—

the oral testimony does not support Wisconsin's case. A record of more than one thousand pages was made in this case. On the question as to the mouth of the river counsel expressly ignore the oral testimony, and on the question as to the channel counsel discuss that evidence only after apologizing for doing so, and after raising an objection to the court's consideration thereof.

As to the oral testimony in this case we have this to say in reply to the point of view of the present counsel for Wisconsin. If the "main channel of commerce" "the one usually followed", "'the navigable and navigated channel" is the state line, then the testimony of navigators is clearly and unquestionably the best possible evidence as to the location of that line. That a navigator is the best judge of navigability and navigation is too clear for argument. That his evidence is the best and most relevant is equally clear. That evidence is subject to cross-examination and is taken under oath. There can be no question, Wisconsin's counsel ardently to the contrary notwithstanding, that the oral evidence should not only be considered, but, in cases of this kind, is practically decisive. Assuming for argument's sake a conclusion that is not justified by the evidence, or the outside matters brought into the argument by counsel, viz. that the maps and reports of the engineers and early explorers are contrary to the oral evidence, there can be no question that such evidence is superior in weight to that of the maps and reports, particularly when it clearly appears that the makers of the maps and reports could not have known of or appreciated the questions involved. This point seems clear beyond peradventure, and Minnesota's position is amply supported by the decision of this court in the case of *Missouri vs. Kentucky*, 11 Wall, 395, quoted supra, where it is expressly held that if the evidence from maps and reports of travelers is different from that of living witnesses based on facts, "the latter is to be preferred."

We shall discuss first the evidence introduced by Wisconsin. That evidence was fully commented upon in our main brief, and

no extended reply is necessary in this brief. On page 278 of their brief counsel say:

> "Wisconsin witnesses, of same character as those from Minnesota, and nearly double in number absolutely corroborate and confirm uniform trend of official reports, surveys and locations of boundary line."

and again on page 354 they say:

> "It thus appears that the witnesses for Wisconsin who testified as to the channels of navigation customarily employed were of the same general average character, as to experience and intelligence as the witnesses who testified for Minnesota and there being some 28 or 29 were about double in number."

We take it that counsel in the language above quoted mean to refer to the alleged "locations of boundary line" by the Corps of Engineers. We have already referred to counsel's method of assuming a point not proved as a basis of further argument; in this connection we reiterate that the Corps of Engineers did not locate the boundary line between Minnesota and Wisconsin, and that counsel's restatement of this improper conclusion serves only to show the weakness of their argument. Nor can we agree that the fact that Wisconsin called more witnesses than Minnesota indicates that Wisconsin's case is stronger than that of Minnesota.

Counsel's statement that Wisconsin's witnesses were of the same character and experience as those of Minnesota is unquestionably wrong. Witness after witness called by the State of Wisconsin freely admitted that he did not and could not know

nearly so much about the waters in question or the channels in those waters as did the captains and navigators called by the State of Minnesota. It would serve no useful purpose to reiterate in this reply brief the qualifications of the various witnesses called by Minnesota and Wisconsin, in view of the fact that those qualifications are fully commented on in our main brief. Minnesota called all of the living boat captains that could be found who were familiar with early navigation in the waters in question, and their testimony wholly and without any doubt disproves Wisconsin's theory that the Milford channel was the main channel of navigation. Wisconsin called a few of the leading citizens of Superior, but they did not claim to be navigators and expressly denied any knowledge of channels or courses comparable to the knowledge of the men who made their living by navigating these waters. Outside of these prominent citizens, Wisconsin produced a number of witnesses who cannot be properly called otherwise than riffraff. By this characterization we do not mean any disrespect to the State of Wisconsin or its counsel in this action, but we submit to the court that a reading of the record in this case and of the briefs submitted by Minnesota and Wisconsin will prove beyond any doubt that the witnesses called by Wisconsin were not, as a whole, at all qualified to testify in this action, and that their testimony bears no fair comparison to that of the navigators and captains called by Minnesota.

Indeed it is very noticeable that counsel, as they go through the list of witnesses for Wisconsin, start in with an apology for those witnesses or their method of testimony. Counsel finally hang their hopes in this case on the testimony of Hiram Hayes, James Bardon, Victor Desimval, John Stevens and J. H. Darling. The testimony of these men is dealt with fully in our main brief, but in view of counsel's reliance thereon we shall take the court's time to reply briefly as to their testimony in this brief.

On page 157 of their brief counsel say that the testimony of Hiram Hayes "may come more nearly to deserving the char-

acterization of being the exclusive testimony as to the location of the boundary line." This quotation is typical of counsel's enthusiasm. The following quotation from the examination of Mr. Hayes by counsel for the State of Wisconsin who tried this case is significant:

> "Q. You didn't navigate the water yourself, did you, with deep water boats so that— A. No. I did not.
>
> Q. You had no occasion to become familiar with the channel then yourself, did you? A. I didn't. I was not familiar." (Record p. 464).

In other words the testimony of a witness who, by Wisconsin's own examination at the hearing, did not claim to be familiar with the channels, is now argued to be decisive of the question at issue in this case. Hiram Hayes was not a sailor, was not an engineer, did not claim to know the channels, and did not claim to know the way he went on his excursions. His testimony was of the most general character, and he frankly admitted that his knowledge did not compare in accuracy with the knowledge of the captains called by the State of Minnesota. (Record page 472). He testified that, in going up the river in excursion boats he took the south channel, and in coming down he came "not far from the Minnesota side." Even if this were true it fails to show that the Milford channel was the main channel of navigation. In the face of his admitted lack of qualifications the testimony of Hiram Hayes has very little, if any, force whatsoever.

James Bardon was not a sailor, was not an engineer, did not claim that he knew the course followed and could not give the directions on the map. Counsel, on page 159 of their brief, admit that Mr. Bardon stated that he could not describe the course taken, and add: "We think it doubtful whether any witness could testify with particularity after such a lapse of time."

The statement of counsel is not unfair as to men like Mr. Hayes, Mr. Bardon, Mr. Darling, and practically all of Wisconsin's witnesses, who are not argued to have been navigators at any time, but it is hardly fair as to the captains who navigated these waters freely and almost exclusively. As to them we think the court will agree that it is not only not strange, but in fact very likely that they should remember the course taken. The truth of counsel's statement depends upon the qualifications and experience of the particular witness to which it refers.

We have commented at length in our main brief on the testimony of Mr. Bardon. (Page 259 ff., Minnesota's Brief). Mr. Bardon's testimony as to the main channel is summarized in the language from the record there quoted where, in answer to an extremely leading question, Mr. Bardon said that he "guessed" the Milford channel "was the main channel if it was the deepest water" and further stated that he didn't know where the deepest water was. Mr. Bardon also freely admitted that he was not as competent as the men called by Minnesota to testify as to the navigation of the waters in question (Record page 784), and, all in all, his testimony offers no real support to Wisconsin's theory of the case.

Victor Desimval was the very aged Frenchman, upwards of eighty-five years of age, who owned a little sawmill at Milford in the early sixties. He too, in counsel's enthusiastic language, is "indeed almost the sole reliance of the court for really accurate information as to conditions in the region which most strongly claims our interest and attention." (Page 166, Wisconsin Brief.)

We have discussed Mr. Desimval's testimony quite fully in our main brief (pages 27 ff., Minnesota Brief), and it is not necessary to go over that testimony again. Suffice it to say that his experience with navigation merely as a marine engineer on a little flat-bottom boat drawing three and one-half feet of water,

for a few months' time, hardly qualified him to testify as to the channels in St. Louis Bay.

Counsel, on page 160 and 161 of their brief refer at length to a statement made in our main brief that Desimval's testimony was contradicted by that of two dozen witnesses.

What was said in our main brief concerning two dozen witnesses and the testimony of Desimval was as follows:

> "The old gentleman was absolutely wrong in his testimony concerning the cut-off channel because he said it was so shallow that nothing but row boats could use it.
>
> Q. Now in the 'cut-off', what is known as the 'cut-off', that water was only deep enough, as I understand it, for row boats and canoes? A. That is all." (pp. 242, 243).

On this testimony in our main brief we add the following comment:

> "Compare that testimony with the testimony of at least two dozen other witnesses testifying in the case, claiming that boats drawing six, seven or eight feet could and did take this channel and the soundings show this to be the fact, and that the water was deep enough for these boats is demonstrated by the record." (Page 243).

We also, on page 238 of our main brief, set out the following testimony of Mr. Desimval:

> "Q. And is that the course that boats generally took then? A. That is the only course for boats to take. The other one is nothing, what they call the cut-off is nothing only for row boats and canoes."

And in our main brief we have this comment:

> "Of course this testimony cannot be true, as probably more than two dozen witnesses testified that all the traffic in the early days was over the channel marked A-G-B-C on Defendant's Exhibit 1, and furthermore his testimony shows that outside the Manhattan, which went up the Bay at one time (he says just one trip) (See page 709), the boats that he was familiar with did not draw more than three or four feet of water and there was no necessity of their taking any channel at any place. He testified as to his own experience as an engineer on this little flat bottom boat." (Page 239).

This language then was the excuse for the comment of counsel found on page 161 of their brief in which they say:

> "First of all we waive all criticism of the fervor that transformed the total of fifteen witnesses into twenty-four. Examination however, has already disclosed that of the fifteen witnesses who were produced by Minnesota, ten of them, John J. Jeffry, George Lloyd, H. G. Inman, John H. Norton, F. A. Brewer, Alexander McDougall, C. W. McManus, D. E. Stevens, Albert Swenson and John Howard laid no claims to any experience in navigation nor any actual knowledge of the situation, as we understand their testimony, prior to 1870."

In the first place we did not say that the two dozen witnesses who testified to a statement of fact showing that Desimval's statements could not be true were witnesses called by the State of Minnesota for, as a matter of fact, many of the Wisconsin witnesses contradicted him absolutely and the actual soundings showed that his testimony could not be true. Furthermore, under

the decisions of the court, in the absence of a showing of avulsion, the boundary line would be the varying center of the channel, and it is of no importance whether the witnesses testified as to conditions prior to or after 1870.

John Stevens is also greatly relied upon by Wisconsin. His testimony is commented upon at page 276 of our main brief, and shows beyond all question that his memory was so defective as to make that testimony of no value whatsoever. We think that no comment on the testimony of Mr. Stevens is necessary in this brief.

We have already briefly referred to the testimony of J. H. Darling in this brief, and have fully discussed that testimony in our main brief (page 192). His testimony alone, or with the maps which counsel desire to link up with it, does not support Wisconsin's case, and, in fact, as we have already pointed out, serves to prove not only that these maps did not purport to show the boundary line, but also that Mr. Darling had no appreciation of the factors which, by the decisions of the courts, determine the boundary line in cases of this type. Mr. Darling also specifically admitted the superiority of the qualifications of the witnesses called by Minnesota. (Record page 617).

Thus, of the five witnesses referred to on whose testimony Wisconsin relies so strongly, three admit that the witnesses produced by Minnesota were better qualified on the questions involved in the instant case, and the qualifications of the other two speak for themselves. Even taking counsel's enthusiasm and facility in coming to conclusions into consideration, it is hard to see just how they can claim that Wisconsin's witnesses were of the same character and experience as those of Minnesota. A reading of the testimony introduced by Wisconsin speaks more clearly than any argument thereon in this connection, and we shall not prolong this discussion by further consideration of that testimony.

Nor is it necessary to make any reply argument concerning the testimony introduced by Minnesota, except only to call the court's attention to the confusion attempted to be injected into the case by counsel for Wisconsin as to what Minnesota claims as the state line, and to some of the inaccurate and misleading statements made concerning that testimony by counsel for Wisconsin.

As stated in our original brief, the contention of Minnesota is that the "navigated and navigable channel" from the beginning was on the line shown on our Exhibits 1 and 3, and marked in red. At the time Congress established the boundary of Wisconsin in 1846 the only survey that had been made as to a channel, was made by Lieutenant Bayfield in 1823 to 1825. His "track survey" showed the channel above Grassy Point and to the easterly of Big Island substantially, if not exactly, on the line claimed by Minnesota as the channel, that is from Grassy Point to the "forks", so to speak, to the easterly of Big Island. In 1846, at the time the State line of Wisconsin was established, the knowledge derived from this map was the only knowledge of a channel that Congress had or could have had. The Nicollet map does not aid in any way in ascertaining the channel. At the time this state line was established Bayfield's "track survey" had been published at least twenty-one years.

And as we now understand the situation, there is no dispute between the parties to this litigation in so far as the channel running south of Big Island is concerned. This island was patented to the State of Wisconsin, no claim was ever made to it by the State of Minnesota, and under the holdings of this court from the beginning down to the present time there is an unbroken line of decisions establishing that no matter where the original channel might have been, as fixed by Congrees, Minnesota is estopped by her acquiescence to raise any question now as to the state line being north of Big Island down as far as the "forks", so to speak, to the easterly of Big Island.

But counsel seem to argue here and there in their brief, (and at other times seem to abandon such argument) that because we do not claim that the "cut-off", or channel south of the Island, is the state line, Minnesota is also estopped to claim that the state line is anywhere in any channel that is connected with this "cut-off", or south channel.

As we stated in our original brief, we do not discuss nor care to discuss the question of the "cut-off", or south channel, being the state line. The matter is foreclosed and we concede it. But we do claim that the main channel of commerce and state line, to the westerly of Grassy Point, runs to the "forks" to the easterly of Big Island, and then extends from the "forks" along the channel B-C to north of Big Island.

As we understand the situation, practically every witness called by the State of Minnesota, and some called by the State of Wisconsin, who had been navigators on these waters in the early days, described the main navigated channel from Grassy Point to the "forks" and then either through the "cut-off", or to point C to the north end of Big Island; that is, instead of their failing to testify as to the channel from B to C, on Minnesota's Exhibits 1 and 3, as claimed by counsel for the State of Wisconsin, they specifically and affirmatively did testify to such fact.

At the risk of undue repetition, but as we think it will aid the court in its labors, we wish to call attention briefly and in a condensed form, to the testimony of the witnesses called by the State of Minnesota as to the channel from the "forks" going north of Big Island, which counsel in their brief claim is wanting in this case.

Mr. John Howard testified specifically to this several times. See especially page 50, folio 18; see also his testimony on page 51, and his cross-examination; see page 54, on which page he says:

"Q. How much water did the boat draw? A. Oh, I should say she drew six or seven feet.

Q. What channels did you use in navigating that boat? A. Why, we used the channel from A to C.

Q. A to C? A. Yes, sir; and then on up."

Again he testified:

"Q. Calling your attention to the line in red, marked A to B, and extended on from B to C, I will ask you what that line indicates? A. That line indicates the course of the channel that was taken to go up the river, to take the north channel.

Q. Prior to the time— A. Prior to the time there was any dredging done." (Page 57, folio 29).

He refers to this channel time and again elsewhere in his direct testimony as well as in his cross-examination.

The next witness on this point was Alfred Merritt, who testified specifically time and again that the main line of travel when he was on these waters was the line A-E-G-B to C, as claimed by Minnesota. His testimony was:

"A. Oh, yes, it was a good deal straighter; it was a better line, sure.

Q. And practically all the traffic took that line? A. Yes sir." (See page 114).

And he referred to this channel frequently in his testimony thereafter. (See also our brief in chief). Mr. Merritt was recalled and testified as to the comparison of the traffic that went up the line claimed by Minnesota, as compared to that going up channel H. He testified:

"A. I think nine-tenths went up this way, just a rough guess.

Q. You would say nine-tenths would go up this line A-G-B; that would include what turned off and went up the "cut-off"? A. Yes.

Q. And what went up the line B-C? A. Well, I should say nine out of ten of the boats went up this what they called the short-cut.

Q. Then there would be a larger proportion including those that went up here, A-G-B-C, if you combine those with what went on the short-cut? A. Yes, I think so. Nothing went that channel only as we went here to this dock.

Q. That is, you are referring to the channel marked H? A. Yes." (Record, page 978, fol. 1527).

In the face of this testimony we cannot see why counsel should make the comments they do and draw the conclusions they do from the testimony of Alfred Merritt.

We now consider the testimony of Captain Benjamin F. Howard, on the channel B-C. He testified specifically that practically all the traffic that went up as far as Big Island went on the channel claimed by Minnesota, and while most of it went south of the island, on the "cut-off", yet all of the traffic that went north of the island went on the Minnesota channel A-B-C. (See Record, page 158),

It perhaps is unnecessary to state that all three of these witnesses just referred to, John Howard, Alfred Merritt and Benjamin F. Howard, testified that Channel H was only used as far as Milford, and they came back the same way as they went in. And indeed they all testify, as do the other competent witnesses, that the bar and sharp turns at the upper end of channel H were of such a nature that at times it was very difficult, if not impossible, to get through. Attention has been called to this testimony in our brief in chief.

The witness Albert Swenson was very familiar with these

channels and these bays, and had *"worked all over them for years"*, although not a naviagtor. He testified specifically to the routes; that the boats traveled over the line claimed by Minnesota A-E-G-B-C. See testimony on page 178 and elsewhere.

Again he testified concerning the route traveled by boats:

> "Q. It was the short route. Now, when you get down here to near Grassy Point, and from the point that was marked C to A on Minnesota's Exhibit 3, the shortest route there is the route that you have described on this map with a pencil, isn't it? A. Yes, sir.
>
> Q. And that shows depth of water seven, nine and ten feet, desn't it? Seven, nine and ten feet. (Pointing on the map). A. Yes." (Page 190).

He then testified that he supposed that the reason they took that route was because it was the shortest, although he did not know. He answered:

> "Yes. I have seen them go, I have seen them do it, and I knew they did it, and the reasons they had for it I didn't know." (Page 191).

The next witness we call attention to is Darwin E. Stevens. He specifically testified that in going from Grassy Point to Fond du Lac, that practically the universal practice was to use the Minnesota line, whether you went north or south of the island. He specifically stated that if you went on the north of the island you went on the line marked B-C. (See page 213).

C. W. McManus specifically testified that in the early days of navigation practically all the travel by Grassy Point to Fond

du Lac went over the Minnesota channel, and when the boats came to the "forks", to the easterly of Big Island, they either went the "cut-off" to the south of Big Island, or went the channel B-C to north of Big Island. This witness' testimony conclusively shows that he always traveled the Minnesota channel whether he went north of Big Island, or the "cut-off" south of Big Island. See page 228 and elsewhere; also see page 232.

Captain McDougall, while not referring to the course the boats took after they reached the "forks" and going up the Minnesota channel, yet he conclusively establishes the fact that there was no travel of any kind on channel H, except to the Milford Dock, and the unavoidable inference is, in fact, conclusively established by his testimoney that boats going north of the island must have traveled on the channel B-C.

The next witness on the line of travel from B to C is Frank A. Brewer. He specifically testified, both on direct and cross-examination, that this was the channel used. See Record, page 127; also our brief in commenting on his testimony, pages 130 and 131.

John H. Norton was the next witness to whose testimony we would call attention on this point, and he specifically testified that the Minnesota line on Exhibit 3 was the channel that was used from A to C, which included that from B to C. See Record, page 274; also see page 275; see also our brief in chief, pages 133 and 134.

We now call attention to Martin Wheeler's testimony on this point. He time and again testified that they always traveled on the Minnesota line from A to B, and if they went north of the island they went on the line B-C, or if they wanted to take the short-cut they went south of the island. He testified:

"Q. What channel do you mean? A. It would be this one to the right of this island. The dividing point would be about here. Is that B? (The point B is the "forks").

Q. Yes. A. That's about where, if they were going to the north of the island, we would go around this way.

Q. That is, if you were going to the north of the island you would go along the line B-C or substantially that? A. Yes, about that. If we were going to Fond du Lac, generally took what you call the 'cut-off' channel." (See Record, page 951).

And he testified on this point and to this effect on pages 952 and 953.

Captain Inman testified on this point as follows, after stating that if they went north of the island they traveled B-C, and if they went south they took the "cut-off":

"Q. Do you know whether other boats took this same channel that you took, from A to G and from G to B and B to C, and if they went the short-cut, from B to D? A. There weren't so very many boats, but that was the way pilots taught me to take.

Q. Did you ever in all of your experience take this channel H? A. No, sir, I did not in those days." (See Record, page 966).

We call attention to the testimony of George Lloyd. He specifically testified that with reference to the travel up above the "forks", or "junction", as he called it:

"Q. You called that the "junction"? A. This is the short-cut.

Q. That is the line from B to D, if you were on the "cut-off"? A. Yes, sir.

Q. Then when you went north of the island which route did you take? A. Right around here. (Indicating).

Q. That would be B to C? A. B to C.

Q. *Now did you ever use the channel H, being the channel that went up to Milford, that is when you went clear up the bay?* A. *No, sir.*" (Page 969).

Captain Jeffrey specifically testified that when they went north of the island they took the "forks" channel, B to C. See pages 994 and 995.

Not only did practically all of the navigators that were called as witnesses by the State of Minnesota testify to this channel B to C, but the witness Captain Ed Smith, called by the State of Wisconsin, who was born in Superior, Wisconsin, lived on those waters all his life, had been been a navigator practically all of his life, and was at the time of the taking of the testimony a captain on the steamship *"America"*, navigating on Lake Superior, testified, if he testified to anything, that in the early days the channel was as claimed by Minnesota. We call special attentention to his testimony at pages 544 and 545. See our comments upon his testimony in our main brief, page 165. On page 285 of their brief counsel apologize for Captain Smith as ignorant. He was not ignorant. He is now and for many years has been the captain of a large passenger steamship plying on Lake Superior; the only evidence of his "ignorance" was the fact that he testified to the Minnesota channel as being the one used.

In the face of all of this testimony we do not understand why counsel should make the statements they do with reference to the testimony showing no channel of commerce from B to C.

We shall now call attention very briefly to some of the inaccurate statements made by counsel concerning the evidence introduced by Minnesota.

On page 219, in speaking of the testimony of John Howard, they say:

> "Indeed, as we understand his testimony went to the length of asserting the obvious physical impossibility that boats drawing ten to twelve feet took the cut-off channel."

On page 229 they leave out any qualification as to their "understanding", and get so strong in referring to the testimony of Mr. Howard as to say, "It will be recalled, testified, that boats, 'lots of them', went through the cut-off channel drawing ten to twelve feet."

The testimony of Mr. Howard does not justify any such statement as that used by counsel. Counsel, on cross-examination, asked him concerning the course of boats at a specific point on the map, and the following took place:

> "Q. And as a matter of fact all boats drawing ten to twelve feet of water that went up there followed that channel? A. Oh, no, *not all boats;* they go up this other channel, lots of them.
>
> Q. Well, in the south channel, before this was dredged out at this point? A. Yes, sir.
>
> Q. There is seven feet marked at the crossmark immediately on the line between B and D, about half way between those points; there appears to be only seven feet of water, according to this map, isn't there? A. Yes, sir; that is just below the line.
>
> Q. Just below the line?
>
> Mr. Fryberger: Mr. Hudson, did you say that was before it was dredged?
>
> Witness: This was never dredged. You mean before this was dredged?

Mr. Hudson: Before this was dredged, here? (Indicating).

Mr. Fryberger: There was no dredging there, was there?

Witness: I do not think so. This never was dredged." (Indicating). (See Record, pages 70 and 71).

Mr. Howard at no time testified, nor attempted to testify that he himself, or anyone else of whom he knew took boats through the Minnesota channel before dredging or any other channel, that drew over eight feet of water, and the confusion all arose on the question of *"all boats"* going one way.

In commenting upon the testimony of the witness Benjamin F. Howard, counsel say, on page 230 of their brief:

"He never knew of any boat drawing six feet of water going between the point marked C, and the deep water in toward Milford.

It is an incontrovertible physical fact that in the early '90's there was a shoal place north of Fisherman's Island, over which there was a depth of approximately four feet, which extended all the way to the main channel at Grassy Point. And yet, if the testimony of this witness is to count for anything, he must persuade the court that he navigated a boat across this area with a draft of seven feet."

As we understand this statement, there is no evidence in the record of any nature or description to justify any such assertion.

In Captain Benjamin F. Howard's testimony, as found at page 150 of the record, he testified that they followed the Minnesota channel, the one that went north of the island, up to the point C, as shown on the Meade map. (See Record, page 158).

The Meade map shows soundings all the way up the Minnesota channel from A to C, of not less than eight feet in depth. Witness after witness testified to the narrowness of channel H, and that such cannel H had a depth of eight feet only near point C. Witness after witness, all boat captains, testified to the difficulty encounteed when attempting to get into the channel H, near the point marked C, owing to the narrowness and crookedness of the channel. There is a very sharp turn there, as shown by the evidence, and as indicated on the Meade map. But when it comes to any testimony showing that there were only four feet of water to the northerly of Fisherman's Island at any time, time, we claim that it is non-existent. In fact the Meade map showing eight feet of water along the entire line of the Minnesota channel, backed up by the unquestioned testimony of all the captains who navigated these waters in an early day, establishes beyond doubt that the water to the northerly of Fisherman's Island at all times was at least eight feet deep instead of four feet, as contended by counsel. Indeed, as we understand it, counsel use the Meade map as showing the proper soundings when they think it is to their advantage, and repudiate the Meade soundings when they think it is more beneficial for their case so to do.

On page 241 of their brief counsel make the statement that Captain McDougall testified that he had no experience as to the Minnesota channel, and further add: *"Again he testified to his entire ignorance of the so-called Minnesota channel."* On page 299 of their brief they get a little stronger and say that Captain McDougall had never heard of the channel, and on page 364 of their brief they get still stronger—"Alexander McDougall who never heard of the line B-C."

Let us consider for a moment what Captain McDougall's testimony really was, with reference to the Minnesota channel in the disputed territory. At the bottom of page 235 of the Record he delineates the line taken in the usual course of travel by boat

up as far as the "Forks". Then he was asked with reference to channel H:

> "Q. Now was there a navigable channel right next to Grassy Point here on this curved line which is marked H at one point? A. Where do you mean?
> Q. I say was there along there? A. A channel?
> Q. Yes. A. Not that I know." (Record, page 236).

It was this channel H that the witness was testifying about when he said he had never heard about it until the dredging was done at the point C. *He never even intimated at any time that he had never heard of the Minnesota channel.* Instead of that he testified squarely to where it was in the disputed waters, time and time again.

On his cross-examination it is perfectly clear that counsel for Wisocnsin understood that Captain McDougall testified that he had no knowledge of channel H and counsel understood that Captain McDougall was not referring to the Minnesota channel or any part of it when he said he had not heard of said channel.

That Mr. Gard, counsel for Wisconsin who conducted the hearing on its behalf, fully understood what Captain McDougall was talking about when he said he had not heard of channel H, and that the statement of counsel on the brief is clearly something that has originated since the trial or the taking of the evidence, is clear from a reading of the evidence in this connection.

> "Q. Now, Captain McDougall, as I understood your evidence on direct examination, you stated *that you did not know of a channel marked on this Meade map H.* A. That I did not know there was one?
> Q. Yes. A. No, I did not, honestly.
> Q. I just want to get it on the record; I am not ques-

tioning that you did not know it, Captain. *But you stated that you did not know of the channel marked H on this map?* A. No channel marked on that map now.

Q. Will you read the soundings through that? A. That shows a deep hole in the bay, that is all.

Q. How long is it? A. That is not a channel.

Q. Just wait, Captain. How long is it? A. I don't see the channel there by looking at that chart.

Q. You don't see that channel marked H there, that is, that red ink, marked H? A. I see that H plainly enough.

Q. But you do not see the channel there? A. I do not; no, sir.

Q. And you don't know that there was any channel there? A. I never knew there was.

Q. Do you have any reason to question the soundings on this map, that purport to have been the Meade soundings? A. I have no question but that is correct, just as stated.

Q. Just as the map shows it? A. Yes, I think probably it was that way." (See Record page 251).

He then testified how he would run in going up the river. (See page 252).

It is perfectly clear from the testimony of Captain McDougall that it was channel H that he had never heard of, instead of the Minnesota channel as stated by counsel. We fail to see how this extremely misleading and inaccurate method of making statements can help Wisconsin in this case, or aid the court in coming to a conclusion that is fair to both states.

On page 313 of their brief counsel for Wisconsin make the following statement:

"And this Captain Jeffry, the court will recall, brought confusion to the ranks of Minnesota's witnesses by testifying with great force and directness to the fact that whatever course was taken above Grassy Point, *it was necessary to cross the so-called bar opposite Milford, which there has been so much earnest and labored effort to picture as an obstruc-*

tion that rendered navigation of the Milford channel impossible. Upon the basis of Captain Jeffry's testimony, there was no reason or motive for undertaking the course from B to C, except the scant saving of about nine hundred feet of distance."

All we ask this court to do in this connection is to take the Meade map, look at the soundings running from the Wisconsin shore to the Minnesota shore to the easterly of Big Island and it will see that there is a line of soundings running about eight feet or at least nothing deeper than eight feet the entire distance. This is not a matter that is open to argument or admits of argument. It is demonstrated by the soundings on the Meade map that this bar or shoal of eight feet of water extended across the entire bay whether you took the cut-off south of the Island, whether you took the channel B-C and went north of the Island, or whether you took channel H. It was the shoal that had to be crossed in getting up and down from Grassy Point to Fond du Lac before dredging was done, and this was the shoal that was testified to by Captain Jeffry.

Counsel say on page 252, referring to Captain Jeffry's testimony:

"And he had previously testified to his familiarity with the Milford channel. Asked as to this so-called bar—

Q. Did you run over it very often? A. Oh, I suppose a good many hundred times in my life.

Q. Had no trouble to go over it? A. No, sir." (Wisconsin's Brief, page 252).

Nothing can be more misleading than this statement of counsel that Captain Jeffry testified that he had gone down the

channel H or Milford channel a good many hundreds of times. As we have said before, counsel who wrote this brief did not hear Captain Jeffry testify, but we cannot understand how any one can read the testimony of Captain Jeffry and yet make the statement that we have just referred to. We have referred to his testimony quite freely in our main brief, but at the risk of undue repetition and to aid the court we would like to refer briefly to his testimony here.

The difficulty with counsel's statement is this. Captain Jeffry testified the shoal place extended from the Minnesota shore to the Wisconsin shore below Big Island, at least wherever the boats had to cross, no matter whether you took the cut-off south of the island, the Minnesota channel north of the Island, or even if you attempted to go down the Milford channel at the point C. In his direct testimony he testified that they took the Minnesota channel westerly of Grassy Point on the lines A-G, B-C, etc. (See Record bottom page 994, top of page 995). He testified:

> "Q. If you wanted to go the cut-off you would go which side of the little island? A. I would go on the south side. *If I wanted to go up the river I would go on the north side.*
>
> *Q. About how many feet from the Island? A. Pretty close to it either way.*
>
> *Q. Is that the route that all of the boats took in the early days? A. Yes.*
>
> *Q. Before the deep channel was dredged so that they could get down there with the scows of lumber? A. Yes.*
> * * *" (See Record, page 995).

He then testified specifically that he never came into the Milford channel to haul his logs for Desimval except when he hauled them out from the channel itself and not above. His reply is this:

"A. Not unless he had them into Milford and wanted them pulled out of there.

Q. He is mistaken about that? A. He is mistaken about that unless he had put some logs down off the hill-top, which the old man Desimval did drop some down where the Duluth Heights used to come out just west of that he let them down with a line for his own little mill. Whether the young fellow ever logged down there I don't know. Did he say what mill I delivered them at?" (Record page 995).

It is perfectly clear from his testimony that he never at any time used channel H or the Milford channel except to pull out logs that were deposited in the Milford channel, but that he always went on the Minnesota channel and either north or south of the Island and the "many hundreds of times" that he crossed this *"eight-foot depth"* was when he was coming down the channel B-C. It is not a matter that is open to argument on this testimony. The testimony demonstrates that that is what the witness said.

On his cross-examiantion counsel try to get him to say that he had never used the channel north of the Island coming down on the Minnesota channel B-C but he did not testify as counsel wished. Counsel asked:

"Q. Then it was just occasionally you went north of the Big Island? A. No, I towed a lot of logs that was put in below the westerly end of the cut-off.

Q. When was that? A. Different years; some years more than others; they used to put in them days. It was pine all through. Wherever there was a batch of logs they told me to go and get them and I would get them if the tug could get over the bottom.

Q. You know where the main channel of the river is above Grassy Point? A. The way I used to go the main channel when I would go up I would strike, just as I say, *to the north of the little island.*" (See Record page 998).

Looking at the Meade map will demonstrate that he could not go anywhere near the little island by taking channel H, but the only way to go near the little island was to take the Minnesota channel.

Again counsel asked him:

"You heard them talking about the bar up northerly or up above that little island ,that Pancake Island, didn't you, at that hearing? A. Yes. We never had any name for that island. You call that Pancake.

Q. Some of them did. It's in the vicinity of the Zenith Furnace Company. A. It is almost abreast, I guess.

Q. You heard them talking about a bar in the channel? A. There was a flat place there.

Q. You heard somebody testify that they couldn't get over that, didn't you? A. No, I don't know. I don't who done that. I always got over it." (Record, page 998).

Here it will be seen that counsel is trying to get Captain Jeffrey to testify that there was a bar in the Minnesota channel running from B to C near Pancake Island. He said he "had no trouble getting over it."

Now, let us follow up his testimony on this point.

"Q. You always got over it? A. Yes.

Q. Had no trouble in getting over it? A. No, not if I kept in the right place. I have taken men up and showed them the way up, and tend to my business coming down, and they would run on coming down.

Q. Did you run over it very often? A. Oh, I suppose a good many hundred times in my life.

Q. Have no trouble getting over it? A. No, sir," etc. (Record, page 999).

The present counsel for Wisconsin try to turn a plain statement of the witness showing that he went over the Minnesota channel hundreds of times to a statement that he went over the Milford channel hundreds of times, when exactly the reverse is demonstrated by the testimony of the captain. Again Captain Jeffry testified as to this shoal place having to be crossed no difference how you went from Grassy Point to Fond du Lac.

He said:

"Q. As I understand you, when you towed from Fond du Lac all above from Spirit Lake you always came the cut-off route? A. Not always but most of the time.

Q. When would you not come the cut-off? A. Sometimes I would get a long string, maybe three or four batches of logs. Sometimes they would get a tail on me. I wouldn't get the right swing. The curve wasn't just as I expected to find it. We all get fooled in our business, in that way, and I would have to drop down and come down the other way; *go north of the little island instead of south.*" (Record, page 1000).

This shows conclusively that he was not talking about the Milford channel.

"Q. That would be just occasionally? A. Not very often. After awhile we put a sheer boom so they wouldn't do that on me. Had to have it fixed so any other boat we wanted to pass or let the scow through they could let it loose.

Q. You have navigated that main channel over next to the Minnesota shore above Grassy Point? A. Very little.

Q. But you have navigated it? A. Yes, sir. I have navigated all of the water up there that was fit for a boat to float.

Q. There was plenty of water down there, wasn't there? A. There was down near the point, (Grassy Point), yes, sir.

Q. There was all the way up, wasn't there? A. *You had the same flat water as you did going through here. Same flat place I don't care which way you went.*

Q. You had plenty of water between Grassy Point and that bar, didn't you? A. Yes, sir." (Record, page 1000).

Here again is a demonstration by the testimony of Captain Jeffry that the bar he referred to that you had to cross to get up to Fond du Lac was the irregular shoal shown on Meade map that extended from the Minnesota shore to the Wisconsin shore to the southerly of Big Island, but above all, the testimony of Captain Jeffry demonstrates that while he knew of the Milford channel he practically never used it except for the purpose of going into *"Victor's Landing"*, as he called it, to tow out logs from around Milford, but he never used it for the purpose of going up or down to Fond du Lac.

Again his testimony demonstrating, in so far as he was concerned, the shoal place or bar that you had to cross, no difference which channel was taken, is found at page 1001 of the Record, where he says:

"Q. *So far as you know all the boats go over that bar that you spoke of above this little island, that went northerly of Big Island? A. They either went there or else they went through the cut-off or they didn't get up to Fond du Lac.*"

Continuing, he testified, on redirect:

"Q. As I understand it you went up the channel that you described, *the one that you said you always took up*

around this little grassy island—you had been up there hundreds of times haven't you, north of that island? A. Yes, I would be safe enough to say that.

Q. And you had no trouble in getting over there with the Nellie Cotton drawing six and a half feet? A. No." (Record, page 1001).

There is absolutely no doubt from the testimony of Captain Jeffry that the Minnesota Channel from B to C was the channel that he had traveled hundreds of times, nor is there any doubt that his testimony demonstrates that he never used the Milford channel except to tow logs out of the lower end of the channel and in doing this he would go in Milford or channel H, as far as the Desimval mill and take the logs out to Grassy Point in the same way as he went in, but he never used this channel in going up the river.

The inaccuracies which we have pointed out are among the most glaring examples of the extent to which counsel's enthusiasm have caried them. Minnesota's witnesses, nearly of them navigators and captains on these waters, testified that the only navigation of the Milford channel prior to 1893 was to go and come to the little Milford mill, and that all the other traffic went either to the south or north of Big Island. Whether a larger or smaller part of the traffic went to the south or north of Big Island does not matter so far as this action is concerned, for in neither case can Wisconsin prevail and accomplish her puropse of procuring the improvements on the Minnesota shore line.

After discussing the testimony of Minnesota's witnesses counsel on page 260 of their brief, offer a supposedly different theory, apparently with the idea that their conception of what the evidence proved needed support from other sources. Their theory here is that there was more current in the Milford channel than in the channel contended for by Minnesota. As a mat-

ter of fact, we think the overwhelming evidence establishes that the current was practically the same over the entire bay to the easterly of Big Island. Several witnesses for Wisconsin attempted to claim that there was more current in the Milford channel than in the other parts of the bay, but the evidence of competent witnesses is so overwhelmingly against this contention that the matter requires no further argument. See on this point our main brief and the testimony there called attention to.

But even if counsel's point be granted, that point is but a re-statement of their theory that the line of deepest soundings controls. It is utterly inconceivable that Congress should have determined the state line on the presence or absence of a current —particularly when, as here, it is shown that the navigable and navigated channel was elsewhere than in the place the greater current is claimed to exist. This theory is equally out of line with the decisions of the courts as to the boundary line between states bordering on a navigable river with that of the "deep water" premise upon which is based. Counsel's purpose, here as elsewhere, is to get far afield from the oral testimony as to actual navigation. We reiterate that the theory that the line of deepest soundings controls the state line cannot possibly be the law, and is supoprted by no adjudicated decisions of any court whatsoever.

In summarizing, on page 354 of their brief, counsel do not claim that the bulk of traffic was through the Milford channel, but say:

> "It being apparent that, roughly classified, the *bulk of traffic* testified to by Minnesota's witnesses was through the cut-off channel, while the *bulk of testimony* offered by Wisconsin's witnesses related to navigation in what the consensus of expression by witnesses for both states rather uniformly characterized as the main channel."

It is Minnesota's position that the so-called Milford Channel, in the absence of proof that it was the main channel of navigation prior to 1893, cannot be the boundary line between the states of Minnesota and Wisconsin. The record shows clearly and beyond all doubt that this so-called Milford channel was not the main channel of navigation; on the contrary, all the commerce, by the overwhelming preponderance of the evidence, was on a line marked A-G-B on Exhibit 1, and thence either north or south of Big Island. Whether the boundary line is north or south of Big Island is not vital to Minnesota's position in this action, for in either case the claims of Wisconsin are entirely defeated.

Counsel's "epitome of argument" on this point is typical of their method of presentation. As to the Meade map they say:

> "General Meade, after a detailed and comprehensive survey, indicated the course of the 'state line' so plainly that, as a Minnesota witness put it, 'of course anybody looks at the map can tell that that is the deepest water' ",

thereby reiterating their completely fallacious theory, upon which Wisconsin's case is based, that the "deepest water" is the "state line" regardless of navigation thereon. Then counsel refer to the various surveys of the Corps of Engineers, all of which we have fully discussed in this reply brief. Their conclusion that the channel so surveyed was reported as the state line is, we submit, incorrect in fact and supported by no fair inference from the many extraneous matters that counsel have brought into their argument. Finally they fall back on the geological map of 1914, which, being made after this controversy arose, of course can have no bearing one way or the other on the ques-

tion at issue here. The significant fact in counsel's epitome is that there is not a single reference therein to the thousand pages of oral testimony taken in this action. Here, as throughout their brief, counsel for Wisconsin completely ignore the fundamental factor in this type of cases, and base their argument on inference and conjecture that is far from satisfactory and cannot, under the authorities, be compared with the testimony of men who admittedly *knew* concerning the things whereof they testified.

We submit that Minnesota's position as to the main channel of navigation, "the navigable and navigated channel", stands precisely as stated in our main brief, and unaffected by the far conjectures and sub-issues that counsel would inject into the case. We have considered these conjectures and sub-issues fully, perhaps too fully, in this brief. They all serve to show Wisconsin's case to be based on a misconception of the law, as well as upon a lack of equity, which it is submitted to the court, is the most extreme in all the books. It is admittedly inequitable and supported by an obvious desire to appropriate property of great value on the Minnesota shore. We believe and respectfully submit to the court that this is one of the cases where the law and equity of the questions involved lead to one and the same conclusion—a conclusion that will give to each of two rapidly developing communities an equal advantage in the thing that is clearly their most valuable common right. *A holding that the Milford channel was the main channel of navigation flies directly in the face of the testimony of every experienced navigator whose evidence was introduced in this case, and would completely ignore the criteria of navigability and actual navigation. Without such a holding Wisconsin cannot prevail.*

In conclusion, we respectfully and confidently submit that a decision for Minnesota on either of the grounds specified in our

briefs is in accord with both the facts and the law applicable, as well as with that high measure of justice which we believe should be accorded in this case.

CLIFFORD L. HILTON,
Attorney-General of the State of Minnesota.

Of Counsel:
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H. B. FRYBERGER,
OSCAR MITCHELL,
LOUIS HANITCH.

IN THE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1918.

16

No. 18, Original.

STATE OF MINNESOTA, COMPLAINANT,

vs.

STATE OF WISCONSIN.

MOTION TO SET CAUSE FOR HEARING.

By CLIFFORD L. HILTON,
Attorney General
for Complainant.

FRANK B. KELLOGG,
of Counsel.

IN THE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1918.

No. 18, Original.

STATE OF MINNESOTA, COMPLAINANT,

vs.

STATE OF WISCONSIN, DEFENDANT.

MOTION TO SET CAUSE FOR HEARING.

Now comes the complainant, State of Minnesota, and would show unto the court that the proof in this case has been completed, and that the original transcript of same has been filed, and that same has peen printed under the supervision of the clerk of this court and printed transcript filed.

Complainant, therefore, moves the court to set this

cause for hearing at as early a date in October term, 1919, as to the court may seem proper.

Respectfully submitted,

STATE OF MINNESOTA,
By CLIFFORD L. HILTON,
Attorney General.

FRANK B. KELLOGG,
of Counsel.

FILED
MAR 11 1919
JAMES D. MAHER,
CLERK.

Supreme Court of the United States

OCTOBER TERM, 1918.

No. 16, ORIGINAL.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

BRIEF FOR STATE OF MINNESOTA.

CLIFFORD L. HILTON,
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Keating-Bennett Printing Co., Duluth, Minn.

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FIRST.

The waters in question are a part of Lake Superior or an arm thereof. The mouth of the St. Louis River is southwesterly of Big Island. The boundary line, as fixed by the acts of Congress, through the center of Lake Superior, is therefore through the center of these waters, midway between the shores 7

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SECOND.

Assuming for the purpose of argument only that the waters to the westerly of Grassy Point and easterly of Big Island are river waters and not bay waters, the evidence establishes beyond a reasonable doubt, in our opinion, that the State line is located in the "navigable and navigated channel", insofar as the disputed territory is concerned, far to the south of all dock property reaching out from the Minensota shore, and if this contention is true, the claims of the State of Wisconsin in this suit are entirely defeated 86

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Supreme Court of the United States

OCTOBER TERM, 1918.

NO. 18, ORIGINAL.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

IN EQUITY.

BRIEF FOR THE STATE OF MINNESOTA.

This case is brought for the settlement of the State boundary in the waters known as Upper and Lower St. Louis Bay, lying between the cities of Duluth, Minnesota, on the north, and Superior, Wisconsin, on the south, at the western end of Lake Superior.

Minnesota maintains that the State line boundary through these waters is the center line or line midway between the shores of these two bays, the waters being the head of Lake Superior.

Wisconsin contends that the waters in question are a part of the St. Louis River and that the boundary line is the thread of that river, and contends the boundary line in Upper St. Louis Bay is a sinuous line with many curves and con-

volutions but in the main hugging the Minnesota shore and through much of its course cutting far inside of and northerly of the government dock line established on the Minnesota side, thus giving Wisconsin ownership and jurisdiction not only out to its own dock line but across the government improved navigable channel and on beyond, embracing a considerable part of the property inside the Minnesota dock line. In Lower St. Louis Bay, which is easterly of Upper St. Louis Bay, Wisconsin concedes, as we understand it, that it is simply a broad expanse of water of about a uniform depth clear across and makes no serious contention that the boundary is otherwise than through the center of the bay.

Minnesota maintains that even if it should be held the waters in question are a part of the Saint Louis River, and not an arm of the Lake, nevertheless the main navigable and navigated channel and therefore the State line, for most of the distance, is on a line substantially midway between the shores.

At the westerly end of Lake Superior there are three pairs of points or projections from the opposite shores of Minnesota and Wisconsin. Starting from the east going west, we first find a pair known as Minnesota and Wisconsin Points. Minnesota Point is a long narrow strip of land, from two or three hundred feet to perhaps seven or eight hundred feet in width and projecting from the Minnesota shore in a gradual curve for a distance of seven or eight miles. Opposite this, on the Wisconsin side, is a much shorter point, known as Wisconsin Point, and between the two is what is commonly known as the "Entry" or the "Superior Entry", a natural opening of about a quarter of a mile or a little more in width. Near the Minnesota main shore a canal through this point was cut about the year 1870, known as the Duluth Ship Canal, and through these openings the traffic from Lake Superior to the cities of Duluth and Superior enters. About a mile to a mile and a half westerly of the last mentioned points there is another pair of points reaching out, one from the Minnesota shore known as Rice's Point, and one from the Wis-

consin shore known as Connor's Point, with water, something less than a quarter of a mile in width, intervening. Just beyond, the waters widen out to a width of a mile and a half to two miles for a distance westerly of between three and four miles, until another pair of points is reached, commonly known as Grassy Point, the main projection at this place being from the Minnesota shore, and at this place there is an opening something like a quarter of a mile in width, and beyond, the waters again widen out to a width of from half a mile to two or three miles, if measurements be taken from the indentations on the shores.

Big Island, containing several hundred acres, is at the westerly end of these waters, some three or four miles from Grassy Point. It is at the southwesterly end of Big Island that Minnesota contends the lake ends and the river begins, that is, the mouth of the river. Westerly from Big Island, a distance of a couple of miles, is the village of Fond du Lac (Head of the Lake), formerly an Indian village and trading post of the Hudson Bay Company, the location of which was marked as "Indian Village" on Nicollet's Map, hereinafter referred to, and several tepees were indicated on the map in connection with the name.

The Enabling Act, permitting the people of Wisconsin Territory to form a Constitution and a State government, was approved August 6th, 1846, (9 U. S. Stat. at Large, p. 56), and the Act of Congress of May 28th, 1848, admitted Wisconsin to the Union (9 U. S. Stat. at Large, p. 233), and in these acts the boundary was described, so far as here important:

> "thence through the center of Lake Superior to the mouth of St. Louis River; thence up the main channel of the St. Louis River to the first rapids of the same above the Indian Village, according to Nicollet's map." (pp. 3 and 4 of the Record.)

The Enabling Act for Minnesota was approved February 26th, 1857 (11 U. S. Stat. at Large, p. 166), and the act admit-

ting Minnesota to the Union was approved May 11th, 1858 (11 U. S. Stat. at Large, p. 285), and the Minnesota acts specify that the boundary is on the boundary line of Wisconsin, so far as here important (p. 4).

It will therefore be seen that if, as Minnesota contends, the mouth of the St. Louis River is at Big Island, then these bays are a part or an arm of Lake Superior and the boundary runs through the center of these bodies of water. If, on the other hand, the mouth of the St. Louis River is, as Wisconsin contends, between some of these pairs of points, then the questions remain: What is the main channel through these bays?—(1) whether it is the line of deepest water, and (2) if so, where that line is, or (3) the main navigable and navigated channel if this is at any point divergent from the line of deepest water, and (4) if so, where that line is, and (5) what is the boundary line in these waters in that portion where admittedly there is simply a broad expanse of water of nearly uniform depth with no defined channel or current, which is true of a considerable part of the waters in question?

In the last twenty-five years the United States government has improved and dredged a channel twenty-two feet in depth through these waters between the dock lines which it has established on the Minnesota and Wisconsin sides. A line through the center of these bays and miwday between the shores of the two States adjoining, lies between the dock lines established by the United States government and at most points substantially on the same line as the channel improved and dredged by the United States government. If, therefore, as Minnesota contends, the boundary between the States is through the center of these waters, the people of each State are able to reach the present improved navigable channel, the owners on each side may improve to the dock lines on the respective shores and where improvements are extended and docks built out to the dock lines there will not arise the intolerable condition of having a single

business on the dock subject to the laws, civil and criminal, and the taxation of the two States and the ordinances and regulations of two cities. On the other hand, if the contention of Wisconsin be adopted, the State boundary line twists like a snake, around and through the dock lines on the Minnesota shore, several times through and across the channel improved and dredged by the United States government and leaves small areas of Wisconsin, which would consist of dock ends, on the Minnesota side of the government improved channel, which channel, as above stated is, in the main, midway between the two shores. Wisconsin's contentions would also leave small portions of Minnesota southerly of the improved navigable channel. The line contended for by Wisconsin would prevent the Minnesota shore owners from reaching the improved navigable channels at all in many instances, but would allow the Wisconsin shore owners to own and occupy the property within the dock lines on both sides of the improved channel. If, in any such places, the shore owners on the Minnesota side acquired the title out to the dock line from the proprietors on the opposite bank, so as to carry on a dock business from the Minnesota shore and have access to the navigable channel as improved by the government, such shore owners would still be subject, in their single business established on such dock, to the criminal and civil laws and taxation of two States and the ordinances and regulations of two cities. Justice and common sense, therefore, would dictate that the State boundary should be midway between the two shores, giving the people of each State and the shore owners equal access to the line of navigation and preventing a multitude of complications in taxation, conflicting laws, city ordinances and regulations and questions of title, to be determined, perhaps, generations hence by attempts of the courts to locate exactly where some imaginary line of deepest water or ancient navigation may have run, since, by the government improvement of the course about midway between the shores, the line that Wisconsin claims as that of deepest water has long since been filled in and obliterated and docks and substantial structures have been built clear across that line to reach the point of navigability.

The people of both States acquiesced in the State boundary being at this center line, where every one of the twenty-five or thirty maps introduced in evidence, marking the State boundary, shows it to be, midway between the shores, since the admission of Wisconsin in 1848 down to about ten years ago, or a period of fully sixty years.

About ten years ago, a dispute, between private claimants, having arisen over a little island which had formed and appeared above these waters at the westerly end of St. Louis Bay, a suit was commenced in the United States Court and a decision rendered between those owners in the year 1913, on the strength of which Wisconsin decided it was justified in reaching across to the Minnesota shore and attempting to tax certain dock end property on the Minnesota side. *Whiteside vs. Norton*, 205 Fed. 5.

About the time this question arose, the legislatures of the two States appointed commissions to attempt to settle the boundary, but they were unable to reach an agreement (pages 8 and 9 of Record). Numerous actions have since been commenced and are now pending between shore owners on opposite sides of these Bays, and many more are contemplated, to determine the ownership of certain dock ends and riparian property. (See bill of complaint, p. 7 and answer, p. 18). All these suits appear to have arisen because of the *Whiteside vs. Norton* decision, above referred to, and the great confusion occasioned thereby. Prior to that decision, Minnesota had exercised jurisdiction, in taxation and otherwise, to the center of these waters, and in its answer Wisconsin "admits that the rights and powers exercised, or assumed to be exercised, if any, by the complainant or its taxing officers, were not challenged by the defendant, or its taxing officers prior to the year 1913" (p. 16 Record).

It may be said at this point that Nicollet's Map, made about the year 1842, while it does designate the location of the Indian

Village, does not locate or indicate the mouth of the St. Louis River, and the map is of a very general character. The reference in the act admitting the State of Wisconsin to the Union to Nicollet's Map seems to have been merely for the purpose of locating the Indian Village thereon shown, from which location the first rapids in the river above the same, as one of the boundary points, could be determined. The words "according to Nicollet's Map" would appear to have no signification as fixing where the mouth of the river was or where Lake Superior commenced.

FIRST.

Minnesota maintains that these waters are a part of Lake Superior, or an arm thereof, and that the mouth of St. Louis River is at the southwesterly end thereof at Big Island, and that the boundary line between the two States, as fixed by the Acts of Congress, is therefore through the center of these waters, midway between the shores, thus giving each State a substantially equal access to the navigable and navigated channel, based upon the following propositions, established by the evidence:

I. The waters of Lake Superior, and not of the St. Louis River, are dominant at the boundary line in question.

A. The waters all along the disputed boundary are of the same level as the waters of the lake, and it stands undisputed that if all the water coming down the St. Louis River should be diverted or dried up, the waters in these bays would still remain at approximately the same level they now have.

B. The oscillations and changes in the lake surface affect thsee boundary waters as far as the westerly end of

Big Island, but not substantially above that point.

C. The waters in these bays flow in both directions and their movement is not always in one direction as is the case in a river.

D. The waters of the bays are subject to the ebb and flow of the true tide of the lake.

E. The waters of all of Lower St. Louis Bay are a broad expanse of nearly uniform depth, with no line of deepest water. The waters of Upper St. Louis Bay are likewise a broad expanse of somewhat more varying depth, but with many channels and lines of navigation, having more the characteristics of an end or border of a lake than of a river.

F. Such currents as there are in these bays are found mostly at either end of the bays and are due to the action of the water when forced up or down through the narrow openings between the pairs of points, just as is the case where there is a narrow water connection between two lakes. They are lake currents, flowing at times in opposite directions, rather than river currents flowing in one direction.

II. The physical characteristics of the shores of these waters are those of a lake and not of a river. There are no well-defined banks, but the shores are full of large indentations and bays and are distinctly different from the well-defined banks of the St. Louis River westerly of Big Island. The contour of the shore of the western end of Lake Superior for a hundred miles or more is that of a body of water gradually narrowing to a point. This contour brings this point approximately at Big Island and not twelve or fourteen miles to the easterly, where the width of the lake is still eight or nine miles.

III. These three pairs of points, projecting from opposite shores, were, according to scientific evidence and the evidence of

tradition, formed *in the lake.* What was once a part of the lake must still be a part thereof, notwithstanding the formation of points projecting therein, even under the description of these waters as being a "drowned river", advanced by the Professors of Wisconsin University. It follows that if there ever was a river at this point it was drowned and obliterated ages ago *by the waters of the lake.*

IV. From a scientific as well as political standpoint, the mouth of the river is where the waters thereof cease to descend and reach the level of the waters of the lake and become a part thereof. This point is at the head of Big Island. The common understanding of the early settlers likewise placed the mouth of the river at this point.

V. All the maps in common use, showing the State boundary, of which there are many, published from the earliest days down to the time this controversy arose, some published by authority of Wisconsni, some by authority of Minnesota, some by prominent citizens of Wisconsin and some by prominent citizens of Minnesota, all, without exception, show the State boundary running through the center of these waters, midway between the shores.

VI. The common understanding of the citizens, from the admission of the two States until this controversy arose, a period of about sixty years, was that the boundary line lay through the center of these waters, midway between the shores. During this time the authorities of the two States and the two cities in these States, acquiesced in this boundary, until in 1913 Wisconsin attempted to reach over the line into Minnesota for taxation purposes. The United States government, in the establishment of dock lines and harbor improvements, recognized the midway line as the natural dividing line, and in this the States and the people thereof acquiesced.

VII. The Acts of Congress defining the boundaries of the States do not locate the mouth of the St. Louis River. Its location at the westerly end of Big Island answers every call in these acts, in entire harmony with the language of the acts; settles the question once and forever in the simplest and most just way, by giving the two States and the two cities in the two States and the shore owners in the two States, equal access to the navigable and navigated channel as improved by the United States government, and avoids the intolerable condition of having the citizens of Minnesota cut off from access to navigation and business properties used as units subjected to the control and jurisdiction, civil and criminal, of two States and the ordinances and regulations of two cities and the taxation of personal property employed thereon in two jurisdictions. The fixing of any other than the midway lines as claimed by Minnesota, would work endless confusion, cause endless litigation for years to come as to just where the real line is, unless the court should cause it to be definitely and permanently marked on the ground or in the water, and would extend the police and criminal jurisdiction of each city and State across the intervening waters to cover small areas and dock ends on the respective opposite shores. The midway line as claimed by Minnesota would lie wholly in the navigable water between the dock lines on opposite shores and would occasion no more confusion than does the exact location of the center line in any other part of Lake Superior.

The foregoing propositions are established by the maps and written records introduced in evidence and by the testimony of witnesses, whose evidence on the different points we shall review under the various headings. As the testimony of these witnesses under the various headings will be briefly referred to, before considering the various headings we wish to introduce to the court the witnesses, whose testimony is so relied upon.

John G. Howard is 61 years of age and has lived at Superior and Duluth for 59 years. He was at one time a sailor and is now

engaged largely in the mineral land business, representing the Yawkey interests of Detroit. His father settled at the Head of the Lakes in 1855 and it was for his father that Howard's Pocket on the Superior side was named (p. 41-45). From the very early days John G. Howard was engaged in logging operations on these bays and worked on steamboats thereon (p. 47). He and his father furnished the first lumber for the Superior Court House, which is still standing (p. 47). The witness has in his possession several very old maps used in the early days and was thoroughly familiar with the usual line of navigation in the very earliest days.

Leonidas Merritt is a member of the famous Merritt family, who were pioneers in Duluth. He is a very prominent citizen, having been the builder, with his brothers, of the Duluth, Missabe & Northern Railway, extending from Duluth to the Iron Ranges, which is the famous iron ore railroad of Minnesota. He was at the time of testifying one of the five City Commissioners of the City of Duluth under the new form of commission government. He was the model for the sculptor who executed the statue on the steps of the State Capitol at St. Paul, illustrating the heroic form of the Northwestern Pioneer. All his life he has been greatly interested in geology, especially as it pertains to iron formations and the receding of the waters of the lakes, leaving iron deposits. He was 73 years of age at the time of taking his testimony. He served three years in the Civil War and has lived in Duluth 61 years, having come in 1856 at the age of 12 years. There were eight of the Merritt boys, three still living in Duluth (p. 82-83). He often piloted steamboats in the early days and was engaged in publishing maps in the eighties. He has given a great deal of study during all his life to the formation of the pairs of points jutting out into the lake.

Alfred Merritt is one of the most substantial citizens of Duluth and a member of the famous pioneer Merritt family. He was 70 years old on the 16th of May, 1917. He came to Duluth

when he was 9 years of age, about the year 1856. His family located at Oneota on St. Louis Bay and he became a sailor in his young manhood and was for years a pilot and navigated the waters in question until about the year 1882. He helped to haul the material for the contsruction of the first railway, the Lake Superior & Mississippi, in 1869. He was one of the principal builders of the Duluth, Missabe & Northern Railway, the famous iron ore road of Minnesota.

Benjamin F. Howard was a brother of the John G. Howard above mentioned. He was born in 1852 at Sandwich, Mass., and came to the Head of the Lakes in 1857. He was for a long time engaged in the lumbering business with his father and gives a very interesting account of pioneer lumbering operations (p. 152-153). He was an alderman of the City of Duluth for six years and President of the Council for two terms along in the nineties. He now lives in Manitoba.

Charles Krause is now a resident of Fond du Lac, Minnesota, and has been for about 60 years. He is engaged in the mercantile business at that point (p. 170-171).

Albert Swenson was born on the edge of St. Louis Bay in 1862 at what is now called Oneota (p. 176). He lived there until 1870 and then moved to Spirit Lake, which is just above Big Island. He has travelled these waters all of his life and knew all the early settlers (p. 178-179).

Captain D. E. Stevens has been a resident of Duluth for forty-eight years, having come here in 1871. He was for one term a member of the City Council of the City of Duluth and was for nine years a member of the Board of Education and was for many years a navigator on the waters in question.

Captain Alexander McDougall has been a resident of the city since 1871. He was inventor and builder of the famous

whaleback type of ship. Since the war broke out he has been building boats for the government at the large McDougall-Duluth Shipyards located on Upper St. Louis Bay, opposite Big Island. Previous to the time he located in Duluth, he was sailing Lake Superior as Captain on a boat. In 1868 he brought the first people to the Head of the Lakes to make the beginning of railroad construction. He had come to Superior on trips as early as 1863. He sailed the lakes until 1881 and since then has been engaged in shipbuilding and in 1888 built the first whaleback. He is one of Duluth's most substantial citizens and has a national fame in shipping circles. He has occupied many positions of trust and has represented both the Cities of Superior and Duluth before Congress with reference to navigation and harbor matters. He has lived both in Superior and in Duluth and was chairman of the joint commission to obtain harbor appropriations and acted with success (p. 247).

Frank A. Brewer was a member of the large lumber firm of Duncan & Brewer Lumber Company. At the time he testified in 1917, he was President of the Board of Education of the City of Duluth and has lived in Duluth since 1880. In his lumbering operations he was thoroughly familiar with these waters and was handling logs upon them for many years.

Solon J. Buck (p. 334) is Assistant Professor of History in the University of Minnesota and holds the position of Secretary and Superintendent of the Minnesota Historical Society and has charge of the records and files of that society, which was organized in 1849, and preserves material for the history of Minnesota and the Northwest in general. The society has moved into a new building erected at a cost of a half million dollars and has approximately 125,000 volumes. He produced several ancient records found in the files of that society, relating to these matters.

Professor F. W. Sardeson (p. 911) is a graduate of Minne-

sota University and for about sixteen years Professor of Geology in that University. He has been engaged in the study of glacial drift deposits in the State of Minnesota for the purposes of land classification or soil survey, and has written treatises, part of which are now published by the University. This work is being done by the United States Geological Survey in co-operation with the geological department of the University. He is United States Geologist and in connection with his work has studied questions of glacial drainage and questions of pre, inter and post glacial rivers; is associated with Mr. Frank Levered, United States Geologist, located at Ann Arbor, and has made a considerable study of what is known as the tilting theory or differential uplift, as applied to the beaches along Lake Superior (p. 913).

Martin Wheeler is at the present time a resident of Washington, D. C. He is 68 years of age and came to Duluth in 1855 and was one of the earliest and best known navigators traveling these waters (p. 948-949).

Luther Mendenhall is a lawyer and one of Duluth's earliest residents and most active business men.

Lawrence Martin was a Professor in the University of Wisconsin and testified in behalf of Wisconsin. Minnesota claims that his testimony, fairly considered, bears out all of Minnesota's contentions. He was Assistant Professor of Physiography and Geography and has been a student of geology at Cornell and Harvard. He worked around the Head of the Lakes in Wisconsin and Minnesota and published certain articles for the United States and Wisconsin Geological Surveys (p. 345-346).

E. F. Bean was a witness for Wisconsin and is Assistant State Geologist for the Geological Survey of Wisconsin (p. 386). Minnesota contends that his testimony, fairly considered, bears out Minnesota's contentions on the issues in question. Mr. Bean was graduated from Wisconsin University in 1909 and taught

physical geography in the Blaine High School at Superior for one year, and in that capacity conducted field excursions with his high school classes around the head of Lake Superior.

R. M. Hayes, an old resident of Superior, was called by Wisconsin, but he was not a navigator and was familiar only in a general way with the issues in question.

Henry S. Butler, a witness for Wisconsin, a lawyer, testified to certain points of Wisconsin law and certain matters with reference to taxation and claims of ownerships (p. 474-476).

J. H. Darling (p. 596) was formerly Assistant Engineer in the government office in the improvement of the Duluth-Superior harbor.

James Bardon (p. 763), a witness for Wisconsin, came to Superior in 1857; has held many offices in Douglas County, Wisconsin, having been County Treasurer, Chairman of the County Board, School Director and member of the City Council. In the early '70s he published one of the first, if not the first, maps of the territory at the Head of the Lakes, showing the State line through the waters in question midway between the Minnesota and Wisconsin shores, as Minnesota claims the line is, and all of the maps since, published by either Wisconsin or Minnesota or the citizens thereof, showing the State line, place it the same as the Bardon map.

John A. Bardon (p. 863), a witness for Wisconsin, was a younger brother of James Bardon. He lived in Superior since 1863, was a member of the Park and Workhouse Commission of that city and was the person in the employ of Wisconsin who looked up and gathered together the witnesses for Wisconsin.

The foregoing are the principal witnesses on either side who testified concerning the State line, the mouth of the river, the

general character of the bays in question, and who identified the maps introduced and gave the historical and scientific evidence relating to the State line. Many of them testified also as to the main navigated and navigable channel through these waters, but there were a considerable number of other witnesses as to this last point, and as to this matter it has not been attempted at this point to introduce those witnesses. We shall now take up and review briefly the testimony relating to the foregoing points by outlining the testimony given as to each of them.

I.

The Waters of Lake Superior, and Not of the St. Louis River, Are Dominant at the Boundary Line in Question.

A. *The waters all along the disputed boundary are of the same level as the waters of the lake, and it stands undisputed that if all the water coming down the St. Louis River should be diverted or dried up, the waters in these bays would still remain at approximately the same level they now have.*

B. *The oscillations and changes in the lake surface affect these boundary waters as far as the westerly end of Big Island, but not substantially above that point.*

It is without contradiction in the evidence that the level of the waters along the disputed boundary, clear from Superior entry to the westerly end of Big Island, where Minnesota maintains the mouth of the river is, are of approximately the same level as the waters of Lake Superior. It stands uncontradicted in the evidence and the witnesses for Wisconsin, as well as those for Minnesota, testified to the fact that if the St. Louis River should be diverted westerly into the Mississippi, the waters of

these bays would still remain at approximately the same level that they now have, which is the level of the lake. It therefore stands without contradiction that the lake waters along this disputed boundary are *absolutely dominant* and that neither their level nor their extent is substantially affected by the flow of the St. Louis River.

John G. Howard says, "The dead water, so to speak, continues as far up as Big Island. There is no particular difference in the color of the water between Lake Superior and these bays" (p. 52). Leonidas Merritt says, "Under ordinary conditions and except in spring freshets, the level of the lake and the level of the water in these bays is approximately the same. Logs put into these waters sometimes float one way and sometimes float the other, depending to some extent on the wind" (p. 90-91). Alfred Merritt says, "Logs in these waters float both ways. Blue lake water is in these bays. When I was on the survey of the Lake Superior & Mississippi Railroad (about 1868) we took a level up near Fond du Lac and when we got down to Minnesota Point we found the water at Fond du Lac was two feet lower than it was at Minnesota Point on account of the wind" (p. 120). Captain Alexander McDougall says, "The waters are substantially the same level as the waters of the main body of Lake Superior (p. 239-240). When the dike was put in from Rice's Point to Minnesota Point, it made no difference in the flow in or out of the Superior entry. It was just the same as it was originally, is now and ever will be, caused by the rise and fall of Lake Superior" (p. 247). Professor Sardeson says the lake is dormant up to Big Island and that the waters up as far as Big Island are controlled by the waters of the lake and those waters are dormant (p. 917). He says a river is a body of water that is long, relatively narrow and has a sloping surface and is controlled by banks and has a current; that these waters do not conform to that definition, as there is no sloping surface and the waters are level (p. 918). "In my studies I examined the banks of the river at Fond du Lac and I know that at a point somewhat

below Fond du Lac, to my certain knowledge there had been no rise in the river above, but below that point along the shores of the bay I could determine that there had been fluctuations there, due to the rise and fall caused by the wind or the tides in the lake" (p. 919). A quotation from a publication of Professor Martin, one of the witnesses for Wisconsin, was put in, with reference to the survey between the States of Wisconsin and Minnesota and the location of the rapids above the Indian Village as defined in the Constitutional boundary, where he says that when the survey was made in 1852 a Chippewa Indian informed George R. Stuntz, the surveyor, that there were rapids nearly opposite the village only a few years before, but that they could not be located at the time, and the surveyor accepted this statement as evidence that the lake level was rising, which resulted in giving Wisconsin a strip of territory a quarter of a mile wide and forty miles long that might otherwise have been in Minnesota. Professor Martin says, "But the decision was just, because the submergence of the rapids had commenced centuries before the boundary was even proposed" (p. 990). Professor Martin, of the Wisconsin University, says in his testimony: "Q. Now, just suppose that the St. Louis River was diverted, we will say at Cloquet, and taken off—just suppose a case—down into the Mississippi, all the water taken off down there, the height of the waters of the Bay of St. Louis would still remain just approximately the same as they are now, wouldn't they? A. Approximately the same." (p. 368). Professor Bean, a witness for Wisconsin, testified on this subject as follows: "Q. Now, this river, the St. Louis River, has nothing to do with the level in the bay; is that true? A. Very little. Q. If there was an opening there (at Superior entry), the lake would create the same level in the bay that exists now if there was no St. Louis River? A. Yes." (p. 409). He says further that even if the St. Louis River were diverted down into the Mississippi, the water in Upper and Lower St. Louis Bays, clear up to Big Island, would still remain approximately the same height as now and there would still be an inflow and outflow at the Superior entry, due to the winds, tides, etc. (p. 411). He says further,

speaking of Lake Pepin, that it is a river, speaking geographically and geologically, but that politically it would be known as a lake and he thinks it would be known as a lake in any Acts of Congress and anything of that sort, but that geographically speaking he thinks it may be considered a river (411, 412).

It will be seen from the foregoing testimony, coming from the witnesses for Wisconsin as well as those for Minnesota, and there is none to contradict it, that without any question the *waters of the lake are dominant* clear along the line of the disputed boundary and are not even affected by the water coming down the St. Louis River. That being so, it follows as a natural conclusion that waters whose height and area are in no manner affected by the waters of the St. Louis River can not properly be said to be a part of that river. The mouth of the river, therefore, should not be said to be out ten or twelve miles in these waters, but must be at the point where the flow of the St. Louis River joins these waters, which point is, in fact, at Big Island.

C. *The waters in these bays flow in both directions and their movement is not always in one direction as is the case in a river.*

John G. Howard says the currents in the bays are either way, up or down. The dead water, so to speak, continues up as far as Big Island, and there is no diffeernce in the color of the water between Lake Superior and these bays (p. 52). Leonidas Merritt says logs put into these waters will sometimes float one way and sometimes float the other, depending to some extent on the wind. "I logged up at Spirit Lake (which is just westerly of Big Island) one time and poled logs down to Patrick's (which is very close to Minnesota Point) and they would float back up towards Fond du Lac if they were given time. The usual current of the water is down until one gets to Big Island; below that there is no well defined channel and no well defined current" (p. 90-91). Captain Alexander McDougall says he has known a

current of water flowing through these entries of six or seven miles an hour in and six or seven miles out, covering the twenty square miles up to the mouth of the river at Big Island (p. 240). Frank Brewer says that he knows there is a rise and fall of the water in these bays (p. 261); that often he has had booms break and their logs would be scattered all over the two bays, Upper and Lower St. Louis Bay, and sometimes over Superior Bay and that they have found their logs as far up as Spirit Lake and up in Pokegama, from breaking of their booms at their mill in the waters below, and that when the booms broke the logs would be scattered both ways from the mill (p. 264) and the logs would float back west when the water was at normal stage (p. 265). Professor Sardeson says that from Big Island down the water in the bay is not running constantly in one direction but sometimes runs in and sometimes out (p. 921). Professor Martin of the University of Wisconsin, a witness for Wisconsin, says that the same current is found in the bays as is found in the lake and that the matter of the current is not a basis upon which one could classify as between a river and a lake (p. 369).

D. *The waters of the bays are subject to the ebb and flow of the true tide of the lake.*

Leonidas Merritt says that there are tides, so-called, that would back the water up in these bays and that the tides were of as much as six inches, and that unless there was a rush of water down the St. Louis River a tide of three inches would back the water up to Fond du Lac (p. 90-91). Alfred Merritt says in Upper and Lower St. Louis Bays there are tides; that he used to tow in these bays and when the tide went up he could tow very easily because he was not going against the current and when it changed he had to wait. He has seen the tide rise as high up as Fond du Lac. Logs in the bays float both ways (p. 120). The tide is from six to nine inches and there is a tide even in still water as shown by the government bureau (p. 139). Albert Swenson, who lived on the shores of these waters all his life, says

there are tides in these bays, regular tides, changing about every two hours continuously the year around; that is, the tide comes up for about two hours and runs the other way for about two hours. He does not know how far up a piece of driftwood would carry, but does know that in 1881 it carried him, a raft of saw logs and a horse for a distance of two miles; that the amount of the rise and fall depends to some extent on winds, but there is a regular tide back and forth regardless of the winds; that he has observed this at three culverts along the Northern Pacific Railway line, where he has often watched the rise and fall of the tides coming in for about two hours and out for about two hours and only still for a minute or so while it changed; that the wind has nothing to do with it any more than that when it is from the northeast the water rises higher than otherwise (p. 180-181). D. E. Stevens says there are tides in these waters extending up at all times as far as Fond du Lac, particularly during the summer time when there wasn't much water coming down the river (p. 214). Captain Alexander McDougall says that there are fluctuations caused by wind pressure or barometer pressure and while perhaps Lake Superior is not affected by what is known as a technical tide, yet that the water fluctuates like the water in a bathtub would, and that this occurs in all our lakes and more in the western end of the lake than most points that he knows of because of its peculiar formation, the finger-mark of the west end of the lake with a great long 400-mile sweep eastwardly of it; that as the great body of water outside these points rises and lowers and the two openings through Superior entry and the Duluth canal let the water in, it is affected in the same ratio that these openings will admit either the inflow or outflow from the enclosure within, and that this extends up to about the head of Big Island (p. 239-240). Frank A. Brewer says that there is quite a tide in these waters (p. 261-262). Professor Sardeson says that there are what he calls tidal actions in these waters nearly up to Fond du Lac and that the lake is dormant only up to Big Island (p. 917-918). Professor Lawrence Martin, of the University of Wisconsin, a witness for Wisconsin, testifies as follows (p. 349):

"Q. What do you say as to there being tides in Lake Superior? A. There are several kinds of movements of water here and one of them is a *true tide.* The geographer uses the name 'tide' only for the rise and fall of the water's surface in relation to the attraction of the moon or the sun and moon combined. Now, there is an actual tide of about three inches in the west end of Lake Superior. In addition to that, there is a rise of the water in relation to the blowing of the wind over the surface, and this you call a wind tide. The wind being from the northeast piles the water up at the west end of the lake, and then besides that there is a third thing that is called 'seiches' and that is a phenomena due to barometric pressure. * * * These three things can be told apart because you can measure the air pressure for the last one, you can discover the direction of the wind for the so-called wind tide and you can keep account of the time and know the position of the sun and moon in relation to what we call the true tide. * * * Q. What about what you call the true tide, is that noticeable in the bay? A. I am told that it is. I have never seen it but it is a very delicate matter to measure, because you have to take into account the complication of the other two when you measure and then compute when the moon would cause the big tide, but I am told that that has been carefully computed by the United States Coast & Geodetic Survey. Q. You say that the tide amounts to about three inches in the lake? A. Yes, sir. Q. Does it amount to about the same thing in the bay? A. I suspect that the three inches mentioned is in the bay rather than the lake." (p. 350). Hiram Hayes, a witness for Wisconsin, says, "I think it is true that there is a rise and fall in the lake and the bay level constantly and that this is called a tide." (p. 471). The foregoing evidence is without dispute and shows beyond a doubt that these waters are subject to the ebb and flow of the tide.

E. *The waters of all of Lower St. Louis Bay are a broad expanse of nearly uniform depth, with no line of deepest water. The waters of Upper St. Louis Bay are likewise a broad expanse*

of somewhat more varying depths, but with many channels and lines of navigation, having more the characteristics of an end or border of a lake than of a river.

John G. Howard says the shores have the characteristics of a bay rather than a river and these waters were always known as a bay rather than a river. There are many deep indentations on both shores, and these give the waters the characteristics of a lake or bay wholly, rather than that of a river (p. 53). The river was well defined down to Big Island and from the western end of Big Island it was just open water and one had to take a general course (p. 70). Leonidas Merritt says these bays have no defined channels; they are flattened out. "A bay is an arm of the lake and these bays are certainly an arm of the lake (p. 88-89). Below Big Island there is no well defined channel and no well defined current. The water on the Wisconsin side in most of St. Louis Bay is about as deep as on the Minnesota side. If I am not mistaken, I think the larger part of St. Louis Bay on Meade's map is shown to be a little deeper on the Wisconsin side, but there was not much difference, probably not over a foot (p. 91). There is no well defined channel except when you get above Big Island. If you say that there is a channel from that point down, it is merely a channel in the bay, made perhaps by a current in the bay directed by the trend of one of the shores" (p. 104-105). Alfred Merritt says, "I consider the waters up to above Big Island as a bay rather than a river on account of the width and on account of the general shallowness of the water, but principally as to the width, as distinguishing them from the river above. The river is confined within well defined banks and as you get beyond the mouth below Big Island, the waters spread out, become very wide and gradually keep spreading out as you follow down" (p. 118-119). Captain D. E. Stevens says the main navigated and navigable channel from the end of Grassy Point followed the red line on Minnesota Exhibit 3 through the letters A, B and D, through the cut-off. There were several channels to the south of this; at least two, although these were shallower and were less used, the larger one running along the lines marked

E and F. The curved line H was never used except in going to Milford (p. 211, 212, 213). Martin Wheeler says the line usually taken by boats, on Minnesota Exhibit 1 was AGBD, south of Big Island, but if they were going north of the island, they would go along the line AGBC (p. 950-951). Very little went up the channel marked H on Exihibit 1 (p. 953). Professor E. F. Bean, of the University of Wisconsin, a witness for Wisconsin, says that inside these bays there are definite channels such as are frequently found in a drowned river valley (p. 388); that between Grassy Point and Connors and Rice's Point the channel has been almost entirely lost, although there is a slightly deeper place at one point (p. 417); that between these points there are some holes where the soundings are deeper, but only what he would call an isolated group (p. 418). Henry S. Butler, a witness for Wisconsin, says that he has never known anyone to take into consideration in examining titles what he terms the "old channel"; that improvements have always stopped at the dock line along the edge of the water in Superior, and that he has never heard anybody claim ownership out to any channel (p. 476-477). J. H. Darling, called as a witness for Wisconsin, says there is substantially a uniform depth in the waters in Upper St. Louis Bay on a line from north to south, clear across from the Minnesota shore to the Wisconsin shore, except right close to the Minnesota shore, and this line would be approximately in the center of Upper St. Louis Bay (p. 621-622), and he thinks that even next to the Minnesota shore, at a point just north of the point marked C on Minnesota Exhibit 1, there is a depth of less than nine feet shown (p. 623), which would indicate a substantially uniform depth clear from the Minnesota shore to the Wisconsin shore running through this point.

From the foregoing it fairly appears that in these waters in question there is no well defined channel and no thalweg, although there can be figured out in some parts of Upper St. Louis Bay several more or less crooked lines which could be followed and get perhaps a foot or so deeper water than would be

obtained in certain other lines, run through these waters. The Meade chart, with the soundings thereon, proves this to be true and confirms the testimony of the witnesses, as above indicated, that there is no well defined channel or current through these waters, but that the soundings are what would be expected in the bottom of any lake, where pot holes might be found at any point, just as in the land surface or the surface of a prairie depressions can be found in a given area which is in general an even or flat surface. These waters were of so comparatively shallow a depth that if there had been any well known line of continuous deepest water, it is clear that navigation would have followed that line, but the evidence all through shows that any part of Lower St. Louis Bay could be navigated about as well as any other part, and that as to Upper St. Louis Bay there were four or five channels that were used, to a greater or less extent, extending practically all over the area of that bay.

F. *Such currents as there are in these bays are found mostly at either end of the bays and are due to the action of the water when forced up or down through the narrow openings between the pairs of points, just as is the case where there is a narrow water connection between two lakes. They are lake currents, flowing at times in opposite directions, rather than river currents flowing in one direction.*

Leonidas Merritt says that wherever there is a current from one cause or another, there will be scourings. Of course, the inflow from the lake may produce it just as much as the outflow. There may be a current in a bay or lake, especially such as is produced by a river flowing into a bay or lake (p. 106). Alfred Merritt says, "I do not say that a channel or a current in a bay indicates that the bay is a river, because unless a bay or lake is practically flat on the bottom there is apt to be a line of deep water through it somewhere" (p. 140). Captain Alexander McDougall says, as this great body of water of the lake outside these points rises and lowers and these two openings

(Superior entry and the Duluth ship canal) let this water into the enclosure of twenty or more square miles inside the points, the water there is affected in the same ratio that these openings will admit either inflow or outflow from this enclosure. "That extends up to about the beginning of the river at Big Island (p. 239-240). My idea is that the outflow tendency of the water as it comes from the river meets the incoming tendency of the water from the lake and neutralizes the current so that the sediment settles, and has formed these three pairs of point." (p. 248). Professor Sardeson says, "As a rule where there are two bodies of water with a connection between them and there is a flow from one into the other and vice versa, the stronger flow occurs from the larger into the smaller. This may be illustrated on the map showing the channel from the west end of Wisconsin Point running westward, which is longer than the one which comes the other way from Rice's Point (p. 937). The bottom of a lake has usually just the contour of the land, except that it is covered with water, and one finds holes and valleys, especially in glacial lakes, which we have here. Lake Superior is a glacial lake" (p. 937-938). Professor Lawrence Martin, Wisconsin's witness, says, referring to the preglacial type of lakes associated with raised beaches, which are found along the north shore of Lake Superior, that these lakes are exactly the same as the bays here in question, except that in the lakes that he spoke about the stream that entered into them is so small that it was not able to keep the channel through the bar and that the only difference, therefore, between such lakes and the bays here in question is that on the smaller lakes there was no inlet and outlet sufficient to keep the channel through, and that if there was no outlet through these bars, these bays would be a lake just the same as the lakes that he has spoken of in his monograph, and the only reason that he can suggest for now calling Superior and St. Louis Bays a river instead of a lake is because there is an inlet and an outlet (p. 370-371.)

II.

The physical characteristics of the shores of these waters are those of a lake and not of a river. There are no well defined banks, but the shores are full of large indentations and bays and are distinctly different from the well defined banks of the St. Louis River westerly of Big Island. The contour of the shore of the western end of Lake Superior for a hundred miles or more is that of a body of water gradually narrowing to a point. This countour brings this point approximately at Big Island and not twelve or fourteen miles to the easterly, where the width of the lake is still eight or nine miles.

John G. Howard says the shores have the characteristics of a bay rather than a river. There are many deep indentations on both shores, especially on the Wisconsin side, and these indentations give the waters the characteristics of a lake or bay wholly, rather than a river (p. 53). Leonidas Merritt says, a bay is a body of water nearly surrounded by land, while a river is a body of water that has a continuous current and narrows down to the proper width of a river and whatever the volume of water requires and has its trends or shores, like a river. Up near Fond du Lac and above, we find well defined banks on the St. Louis River without any substantial indentations, and below, from Big Island down, there are a large number of indentations of the shore, islands and bays of very considerable size. We find Pokegama Bay, Little Pokegama Bay, Howard's Pocket, Kimball's Bay, a considerable number of bays on the Wisconsin side and some small bays on the Minnesota side, the indentations on the north or Minnesota side not being so large (p. 94-95). I would like to say that this Upper Bay is not characteristic of a river whatever. You never saw a river like that on a map or anywhere else (p. 106). Alfred Merritt says I consider the waters up to above Big Island as a bay rather than a river, on account of the width and on account of the general shallowness of the water, but principally as to the width as distinguishing

them from the river above (p. 118-119). Benjamin Howard says it was always understood that St. Louis Bay was divided into two bays by Grassy Point and that they always considered that they got into the river when they traveled above Big Island. The shores of these waters were greatly indented, more like the shores of bays than of a river (p. 156-157). Professor Sardeson says from Big Island down there are no defined banks that he could point out that have been made or control the flow of the river from above. "I would say that a fair definition of the mouth of a river, put in layman's words, would be where the banks definitely and permanently widen out. That, in a loose way, would fit what I have given as the mouth of the river here" (p. 937).

The maps and charts introduced in evidence show that the St. Louis River is confined within fairly well defined banks down to Big Island; that from Big Island down there are several channels, the waters definitely and permanently widen out, and while the waters as they reach the western extreminty of Big Island are perhaps two or three hundred feet in width, yet from that point they gradually widen out until as they pass Big Island they are perhaps a mile or more in width and continue to widen out, except for the intersections of Grassy Point and Connor's and Rice's Points, until they get to Minnesota and Wisconsin Points, where they are eight or nine miles in width, and if it is to be considered that the mouth of the river is at Superior entry, as Wisconsin contends, it then would be at a point where the waters of a river naturally two to three hundred feet wide have widened out until they are about nine miles in width, except for the fact that Minesota Point which itself is only from two hundred to six or seven hundred feet in width, has been formed nearly across from one shore to the other. The general contour of the shore of the western end of Lake Superior, for some hundreds of miles, is that of a body of water gradualy narrowing to a point, and that contour brings the point at approximately Big Island at the west-

erly end of these waters, and not twelve or fourteen miles to the easterly, where the width of Lake Superior is, as above stated, eight or nine miles.

III.

These three pairs of points projecting from opposite shores were, according to scientific evidence and the evidence of tradition, formed in the lake. What was once a part of the lake must be still a part thereof, notwithstanding the formation of points projecting therein, even under the description of these waters as being a "drowned river," advanced by the professors of Wisconsin University. It follows that if there ever was a river at this point it was drowned and obliterated ages ago BY THE WATERS OF THE LAKE.

The testimony introduced proved that there were three pairs of points formed in the head of Lake Superior. The head of Lake Superior is approximately a triangle, with the St. Louis River entering at the apex. From Big Island, the place that Minnesota claims the river enters, passing down three or four miles, we come to Grassy Point, projecting mostly from the Minnesota shore, with a slight projection from the Wisconsin shore. There is some evidence that at one time there was an opening across this point on the Minnesota side, as well as on the Wisconsin side, thus making Grassy Point an island. As we proceed eastward for four or five miles, we come to the next pair of points, Rice's Point in Minnesota and Connor's Point in Wisconsin, and these points are naturally larger, as the triangle head of Lake Superior has widened out. Proceeding further eastward into the lake a couple of miles, we reach Minnesota Point and Wisconsin Point, a long narrow strip of land in the lake, from three hundred to seven or eight hundred feet in width, Minnesota

Point being eight or nine miles in length and Wisconsin Point considerably shorter. The evidence was that the material of these points was of the same formation, composed of sand and pebbles and with some clay intermixed and borings made therein indicated that they were of the same formation for a very considerable depth. The theory of most of the witnesses was that these points were formed by the action of the waves from Lake Superior backing up towards the western end of the lake and causing the deposit of a sediment as the force of the waves coming from the east met the force of the return flow from the western end of the lake, causing at the meeting place comparatively still water in which the sediment was deposited, it being the testimony we believe of all of the witnesses that undoubtedly the most westerly pair of points was first formed, the middle pair next and the most eastern pair last and there being testimony that still further out in the lake another point is gradually forming in the same manner. Minnesota maintains that the mere formation of these points in the lake could not and did not change the character of the waters from those of a lake to that of a river. Neither would the formation of an island in a lake or in a river change the character of the waters from what they were before, from being either a lake or a river. The evidence of the Professors of the University of Wisconsin was that these waters were what they termed a "drowned river." As we understand their theory, it was that because there was indication in the soundings of certain deeps or pockets in the bed of these waters, that this, in their nomenclature, indicated that there had been a prehistoric river at this point and that as there might have been a river there in prehistoric times, some twenty-five to fifty thousand years ago, that it should still be considered a river, even though the waters of Lake Superior, long prior to historic times, had submerged or drowned the ancient river. They advanced this proposition even though at the same time they stated that the waters of Lake Superior were at one time much deeper at the point in question than they are now, possibly 500 feet deep, and extended much further west than they now do or ever did since human history commenced. We think a fair interpretation

of their evidence is that if there ever was a river at the point in question it was drowned and obliterated *by the waters of the lake* and that as far back as history goes these waters have been and are the waters of the lake.

Leonidas Merritt, who had given a great deal of study to this subject, said: (p. 88) "My idea was that that bay was formed when this St. Louis (Bay) and Superior Bay was the open lake. I think anybody that has looked into geology and the formation of these points would agree that Grassy Point was first formed, because the lake gravel is there at the base and the sand out at the end, but it didn't raise above the water by the action of the sea and current as high as it did at Rice's Point and Connor's Point. Rice's Point is exactly the same formation. It has gravel at the base and sand out at the end, and Wisconsin Point is all sand from the drift of the south shore and these were formed from the drifts of the north shore. Minnesota Point is the same exactly, gravel resting out here (indicating), so that these points must have been formed one after another, and that is what we call St. Louis Bay in the old times." He goes on to say that when debris or soil comes down the river and the current is strong enough to carry it out in the lake, it will go only a little ways and will settle when it meets the waves from the lake; that he has observed the formation of these points and the washing of gravel upon them and that he has seen one form in Pike Lake, on the shores of which he has a summer home (p. 88-89). "I have given a great deal of study to the formation of these bars and my opinion is that the first bar in these waters was up in Spirit Lake and that then the bars of the lake were formed, one after another, down to what are now Minnesota and Wisconsin Points" (p. 94). Captain Alexander McDougall says that he has seen another point forming outside of Minnesota Point; that he has been on the hills in Duluth and seen the ice go away to the eastward for a number of days, when he would think navigation would open, and a big northeaster would send it back and it

would ground outside of Minnesota Point and be there perhaps until along in May and the erosion of the ice by the waves throwing the sand up onto the ice would be such that another point like Minnesota Point would form from the sand and deposits of the lake at about the palce where would be the edge of the ice field. He says that the Apostle Islands along the south shore are of a very soft sandstone formation and that the waves carrying the washings and deposits westerly gradually form these bars and there is evidence of their being formed by the washings from this sandstone formation and certain amounts of clay that are mixed in; that the formation of all of these strips of land like Minnesota Point, Rice's Point, Connor's Point and Grassy Point, were deposits in the body of the lake by the erosion from above and the washing of the sands by the action of the waves meeting (p. 238-239). He thinks Grassy Point was formed first, Rice's and Connor's Points next and Minnesota and Wisconsin Points last (p. 248). Professor Sardeson says that before the last glacial period there was probably a river emptying into the Lake Superior basin and that the glacier came through Lake Superior from the northeast and pushed to the southwest as far as Mille Lacs. After it retreated the lakes formed and the glacier did not destroy the old valley and that any buried channel in the bay is older than the last glacial invasion (p. 914-915). He says there is no reason for speaking of any part of the bay below Big Island as a "drowned river", although it is a drowned valley, just as a prairie valley may contain small lakes, so that it would be proper to liken the bed of these waters to a slough in a prairie. He locates the last glacial period from eight to twenty thousand years ago and says that after the glacier disappeared there was a tilting of the valley towards the northeast and a relative lowering of the land towards the southwest (p. 916-917); that at the present time, while the bay may send muddy water out into Lake Superior, yet that the St. Louis River is not dormant and does not control farther than what he calls the mouths of the river, or at Big Island, but that on the other hand, the streams of Lake Superior reverse the current and make what he calls

tidal actions clear up to Big Island (p. 917). He thinks that it is not at all proper from a geological standpoint to speak of a channel through the bay as a drowned river, unless there is proof that there was a river there that was drowned, and in his opinion there never was (p. 937). Professor Lawrence Martin, of the University of Wisconsin, a witness for Wisconsin, says that at one time Lake Superior had a higher level than at present and was probably 500 feet deep at Superior and Duluth and we find that the beaches rise towards the northeast and therefore conclude that the land has been tilting. The effect of that has been to back the waters of the lake into the mouths of all the streams on the Great Lakes. He considers that these waters constitute a "drowned river" (p. 348). He says that as to how Grassy Point, Connor's Point, Rice's Point, Minnesota and Wisconsin Points were formed, that Grassy Point is the hardest and most complicated one in the group to define. He thinks it may have been of somewhat different origin than the other four and that it may have been a spur *between two drowned valleys* and that the points were built by the waves of the lake and the alongshore current of the lake in a place where there was no previous land (p. 348). He thinks the river water had nothing to do with forming any of these points (p. 349). He says the difference between Wisconsin Exhibit 2 and Wisconsin Exhibit 3, which are charts of a geographical survey, is due to the submergence or drowning of a river by the tilting of the earth and the backing up of the water (p. 352-353). He thinks the deeper soundings in St. Louis Bay are parts of a drowned channel (p. 358). He says that bars are formed near the mouth of nearly all the rivers that empty into Lake Superior by the action of the waves of the lake and the alongshore currents (p. 359); that when Lake Superior, ages ago, was four or five hundred feet deep at Duluth and Superior, the St. Louis River would enter the lake way back probably ten miles westerly of Fond du Lac (p. 360) and he *supposes that it ceased flowing into the lake at that point some thirty or forty thousand years ago* (p. 361). He says that in order to have an estuary there must be a drowned river and he thinks there is some difference between an arm of the sea and an estuary (p.

364). He would consider that the river was drowned long before 1848 when Wisconsin was admitted to the Union (p. 365); that in his opinion Minnesota and Wisconsin Points, Rice's Point and Connor's Point were formed *in the lake* (p. 368). He classifies Lake Superior as a lake, although there are currents in it, and says that there is a current in Lake Superior for miles out from the Superior entry and yet there is no question but that this is a lake where the current is found and that this is the same current that is found in the bay, so that the mere matter of current is not a basis upon which one could classify as between a a river and a lake (p. 369). He says that on the south shore of Lake Superior undoubtedly river channels in ancient times extended a great deal farther out when the water of the lake was lower and although the waters of the lake have risen and there are defined channels, yet he does not consider that these rivers now go any farther than the shore of the lake, because no current maintains itself beyond the present shore. In his opinion it is true in some cases that where there was a big drowned river it should still be called a river, but where there is a small drowned river it should not be called a river (p. 383). He says that a drowned river is a drowned river regardless of size, but whether one can find evidence thousands of years after it was drowned depends on whether it happens to be a stream of a magnitude that maintains a current, or a little stream in which the evidence is obliterated (p. 384). He says that Lake Pepin would properly be called a river in a scientific sense if it has a channel and a current and shores (p. 385); that a bay would have no defined channels running through it, probably (p. 386). Professor Bean thinks that Wisconsin and Minnesota Points, Rice's and Connor's Points were formed by alongshore currents of the lake and that the action of the river had very little to do with them (p. 389). He says that Lake Pepin is a river, speaking geographically and geologically, although politically it is known as a lake and he thinks it would be known as a lake in any acts of Congress and judicial decisions, or anything of that sort (p. 411-412).

It fairly appears from the testimony of the witnesses both for Minnesota and Wisconsin that these pairs of points were formed *in the lake*, and if there existed or exists any ancient prehistoric antediluvian river channel, it was obliterated and drowned before the time of man upon the earth and drowned *by the waters of Lake Superior*. It fairly appears from the testimony of Professors Martin and Bean, of the University of Wisconsin, that even on their theory it would be in the most restricted and technical scientific sense that these waters could properly be spoken of as a river at all, drowned or otherwise, and that they would admit that politically speaking, at any time since the presnece of man upon the earth, these waters would be considered a part of the lake rather than a river. Even though it be admitted that in prehistoric times there was a river or a river valley at the point in question and that this was drowned *by the waters of the lake*, and if all agree, as they seem to, that the points or projections were formed *in the lake*, it is difficult to understand why these waters are not now a part or arm of the lake.

IV.

From a scientific as well as political standpoint, the mouth of the river is where the waters thereof cease to descend and reach the level of the waters of the lake and become a part thereof. This point is at the head of Big Island. The common understanding of the early settlers likewise placed the mouth of the river at this point.

Leonidas Merritt says the river commences at the west of the island, where the water divides and runs around the island. From there down it is the bay or part or arm of the lake and this was the common understandnig (p. 88-89). Alfred Merritt says the earliest plats, Minnesota Exhibits 14 and 15, show St. Louis

Bay running clear up to Big Island. We always considered the mouth of the St. Louis River where it divided and went into St. Louis Bay, just above Big Island (p. 116). Benjamin F. Howard says it was always understood in the early days that St. Louis Bay was divided into two bays by Grassy Point, and that St. Louis Bay was between Grassy Point and Big Island or Heugier's Island, and Lower St. Louis Bay was from Grassy Point to Rice's Point; that they always considered in the early days that they got into the St. Louis River when they traveled above Big Island and that the bays were not considered a part of the river (p. 156-157). Charles Krause says the waters from Rice's Point up to Big Island were always known in the early days as St. Louis Bay (p. 170-171) and that the mouth of the St. Louis River emptied into St. Louis Bay on the southerly side of Big Island (p. 175). Albert Swenson says that where the river divides at what is called the upper end of Big Island, where the current divided, was always considered the mouth of the St. Louis River in the early days (p. 179). C. W. McManus says that while he had an idea that the mouth of the St. Louis River was at about Grassy Point, yet he had heard the water above spoken of as the Upper Bay, where the water was wide from shore to shore (p. 231). Captain McDougall says the mouth of the St. Louis River was always understood in the early days to be around Spirit Lake, just above Big Island (p. 235) and that the waters just above and just below Grassy Point were commonly known as Upper and Lower St. Louis Bay (p. 237). Frank A. Brewer says that he always understood that the mouth of the St. Louis River would be where what is known as Upper St. Louis Bay started, just about where the waters divide above Big Island; that he has always known the waters between Rice's Point and the upper end of Big Island as Upper and Lower St. Louis Bay and that they were considered an arm or part of the lake, rather than a river (p. 260, 266). Luther Mendenhall says that the waters in question were commonly known as Upper and Lower St. Louis Bays in the early days (p. 270-272). John H. Norton, for many years County Attorney of St. Louis County, and who was a navigator sailing these waters before he became a lawyer, says that

the mouth of the St. Louis River was always understood to be at the head of Big Island (p. 274). Professor F. W. Sardeson says that he can see no reason for assuming that the mouth of the St. Louis River was ever further towards Lake Superior than it is now; that the St. Louis River builds a delta and as it approaches the edge of the delta it forms distributaries, about three of them, one of which he has heard called the "cut-off", and there are two others running around Big Island; that he should say there are two or three distinct mouths of the river around Big Island and that he thinks if the mouth of the river was ever at a different point, it was further up than it is now, and at one time it may have been at least a mile back from Big Island (p. 914-915). He says that the lake is dormant or of the same level up to Big Island and that is where he would locate the mouth of the river, and he should say that it had been located there for at least a hundred years, and that the waters up to that point are controlled and dominated by the waters of the lake (p. 917). He says that a river is a large body of water, comparatively narrow, and that a lake is a broad body of water, permitting differential or circular currents and essentially does not have a sloping surface. From Big Island down the water in the bay is not running constantly in one direction, but sometimes runs in and sometimes out; that in a river there is not sufficient width for circular currents within the channel and for that reason there is no compensation and the river necessarily has a sloping surface. In a broader piece of water, like a bay or lake, there may be a strong current, but there is room for a return current, which compensates (p. 922). He says that a fair definition of the mouth of a river, put in layman's words, would be where the banks definitely and permanently widen out, and that that, in a loose way, would fit what he has given as the mouth of the river here (p. 937). Professor Sardeson says that he entirely agrees with the statement in Professor Lawrence Martin's book with reference to Lake Pepin, where Professor Martin says: (p. 945)

"There has been difficulty in administering the fish and game laws, because until recently the open season differed in the two States. Accordingly there has been controversy, the State of Minnesota claiming the boundary should be in the middle of the lake halfway between the shores, while the State of Wisconsin contended it should follow the usual route traversed by steamboats. This route happens to be much nearer the Minnesota shore, because the large boats call only at Lake City on the Minnesota side. Accordingly Wisconsin claims nearly three-fourths of Lake Pepin, while Minnesota contends that we are entitled to only half. From the point of view of geography, there is certainly no main channel. Moreover the line of deepest water—if it were held that that constituted a main channel—does not coincide with the route usually followed by steamboats. Figure 52 shows that the line of deepest water * * * is on a broad, flat portion of the lake bottom, much of it occupying half or a third of the width of the lake. Where it is shallow it is even closer to the Minnesota shore than the steamboat route. The whole controversy really turns on the question as to whether the body of water at Lake Pepin is a river or lake. Geographers can have no hesitancy in calling it a lake, just as is the case in Lakes Ontario, Erie, or Huron, which are broad stretches of water in the St. Lawrence River system."

Martin Wheeler says that he always understood the mouth of the river was at Big Island, having sailed these waters for many years in the earliest days and having been a sailor all his life (p. 960). There was introduced by Minnesota a portion of what is known as Document 451 of the 25th Congress, Second Session, being the report of the British Commissioner to the British government and to the United States by its Commissioner, as to carrying into effect the 6th and 7th Articles of the Treaty of Ghent, made the 24th of December, 1814, the portion referred to being Section 98 found at page 74 of that Document and at page 989 of the record herein, reading as follows:

"Section 98. Under this view also, the undersigned had regard to th.. lake by which the St. Louis River discharged itself into Lake Superior. That river, after running through several lakes towards Lake Superior, when it reaches the last named lake, itself expands into a lake upwards of nine miles in length and from two-thirds of a mile to one mile and a third in breadth (as may more fully appear from the affidavit of Mr. Samuel Thompson, one of the Assistant Engineers of the Board to whom this survey was committed, placed in the appendix under letter E), after which it discharges into the Great Lake Superior, not by a bay, as does the Pidgeon River, but by a narrow mouth formed by two mere points of land, and so affording no continued river requiring the title of 'water connection' between it and Lake Superior, but connected intimately and immediately by a strait without length, so that in proceeding from Lake Superior to this lake which discharges into the St. Louis River, one goes at once from Lake Superior into a long lake, all of which will be perceived more satisfactorily from the maps of the Commission, a certified copy of the part of which will also be found in the appendix under the letter F."

Professor Martin, of the University of Wisconsin, is not very definite as to where he would place the mouth of the river, although he says that in his opinion, in a scientific sense, the bays, including the Bay of Superior, may be considered a part of the river (p. 345-347), and although he says that the water in Upper St. Louis Bay, while not due to the river at all, does not seem to him to exclude its being a drowned river, the level of the water there being controlled entirely by the level of the lake (p. 380). He says he would hardly agree with the testimony of Major David C. Huston, of the United States Corps of Engineers who had charge of the improvement of the Duluth Harbor from 1870 to 1873, where Major Huston testified:

"The Bay of Superior is a body of water the level of which is affected by the level of Lake Superior, so I do not

consider the mouth of the Bay of Superior as the proper mouth of the St. Louis River in a scientific sense. I would place the mouth of the St. Louis River proper several miles above Rice's Point, whereas the current, the upstream current caused by the lake, extends several miles above that point at times and the formation of the stream and its banks is evidently due to the action of the lake in that portion." (p. 380).

Professor Martin says that he thinks Major Huston's conclusion is wrong where he (Major Huston) testified, when asked to fix the mouth of the river, "In the neighborhood of twelve miles above Rice's Point. Not attempting to fix it definitely, *I would fix it at that point where the current ceases to be affected by the oscillations of the lake*" (p. 381). Professor Bean, of Wisconsin University, does not say much of anything about the mouth of the river as such, except inferentially, as does Professor Martin, in saying that he considers the bays as a part of the river. Hiram Hayes, a witness for Wisconsin, testified that in the early days he understood the mouth of the river to be between Wisconsin and Minnesota Points (p. 455). J. H. Darling, a witness for Wisconsin, says that in his judgment the mouth of the St. Louis River would be at Grassy Point and he would differ with Major Huston, his superior, as to its being at Big Island (p. 616). James Bardon, a witness for Wisconsin, who placed the boundary line on his map as being midway between the shores, produced a copy of the Superior Chronicle, published June 12th, 1855, containing an article entitled "Entrance to the St. Louis River", noting that buoys, had been set showing the channel (p. 773), and says that he does not remember any discussion about the State boundary until four or five years ago (p. 774). He says that he does not remember whether he suggested putting on his map the words "Mouth of the St. Louis River" at Superior Entry or not and does not remember that Mr. Relf ever received any instructions on the subject (p. 778). John A. Bardon says that the entry between Minnesota

and Wisconsin Points was sometimes spoken of in his boyhood days as the mouth of the St. Louis River and that he believes the reports at the light house were made out designating it the entrance or mouth of St. Louis River and among the boys at that time there was quite a discussion, he always assuming that the entrance to the St. Louis was between Connor's and Rice's Points, and there is where he thought it ought to be (p. 867). Wisconsin introduced Wisconsin Exhibits 20, 21, 22 and 23, offered in evidence at page 443 of the Record and found at pages 1059-1064, of the various charters of the City of Duluth, where, in the description of the boundaries of the said city, reference is made to the mouth of the St. Louis River at the natural entry of the Bay of Superior between Minnesota and Wisconsin Points. The description in all these papers seems to have originated with a description given in the old charter of the Village of Duluth and to have simply been followed in the amendments of the charter.

We submit that the designation of the mouth of the river as given by Major D. C. Huston, of the Corps of Engneers of the United States Army, who was in charge of harbor improvements from 1870 to 1873, where he fixed it "at that point where the current ceases to be affected by the oscillations of the lake", is a fair and honest definition. This, according to the undisputed evidence, would fix it where the Minnesota witnesses say that it was understood in the early days to be, where the scientific evidence indicates that it is and where by all just considerations it ought to be to work out equity and right between these two States and these two cities and the owners of property abutting upon these waters.

In *Johnson vs. State*, 74 Ala. 537, there was an indictment for suffering a game of cards to be played on a boat when on the Mobile River, under an act making it a criminal offense to play

cards on a steamboat on the river. One of the defenses was that the playing was done in Mobile Bay and not in Mobile River. The Court said:

> "There is a well recognized distinction between a river and a bay, the one being an inland stream and the other an inlet of the sea. Where the one begins and the other ends may often be a question of difficulty, yet the two are legally and in fact essentially distinct. * * * We cannot declare under such a rule of construction that the word 'river' was intended to include a bay."

In *Ball vs. Slack*, 2 Wharton 508, 30 Am. Decisions 278, it was held that the mouth of a stream emptying into a tidal river is where it flows into it, when the tide permits it to flow, and is the same at high water as at low water.

In *Alabama vs. Georgia*, 23 Howard 505, 64 U. S. 505, this court quotes with approval the definition of Woolrych, of a river as a body of flowing water with no specific dimensions—larger than a brook or rivulet, less than a sea—a running stream pent on each side by walls or banks, and Grotius Ch. 2-18 to the effect that a river is not to be considered barely as water, but as water confined in such and such banks and running in such and such channel. Hence there is water having a bank and a bed, over which the water flows, called its channel, meaning by the word 'channel' the place where the river flows, including the whole breadth of the river". In this case this court also says: "We say properly the 'shore' of a sea and 'bank' of a river, brook or small water". We think it certain that in common parlance the Minnesota shores and Wisconsin shores on the waters in question are seldom, if ever, spoken of as banks.

In *United States vs. Rogers,* 150 U. S. 249, this court held that the term "high seas" as used in the Revised Statutes is applicable to the open unenclosed waters of the Great Lakes between which the Detroit River is a connecting stream. This court says that "the Great Lakes are seas in fact, where they are navigable at all times and in all directions and border on different nations or states or people and find their outlet in the ocean, however they may be designated", and further says, *"Seas in fact do not cease to be such and become lakes because by local custom they may be so called".*

In *People vs. Featherly,* 12 N. Y., Sup. 389, the syllabus is as follows:

> "Sodus Bay, in Wayne County, is about five miles long and three miles wide. It is separated from Lake Ontario by a bar about a mile in length. At one end of the bar is an opening into the lake about 300 feet long, dredged to make a harbor for vessels. At times other openings are washed through the bar. Several streams empty into the bay but they are not sufficient to supply all its water. The water flows from the bay into the lake, or from the lake into the bay, according to the wind. Held, that Sodus Bay is a part of Lake Ontario within the Laws N. Y. 1879, c. 534 sec. 6 (game law) declaring that the provisions thereof shall not apply to the waters of Lake Ontario."

The court says in the opinion:

> "In view of the location of the bay, which was nearly separated by a sand-bar from the waters of the lake, it is quite evident that the bay was originally part of the lake. All the evidence satisfactorily shows that the creeks feeding the bay were inadequate to supply anything like the amount of water it contained. The lake and bay emptied into each

other, the flow either way being determined by the course and strength of the wind."

In *Ainsworth vs. Munoskong Hunting & Fishing Club*, 159 Mich. 61, 123 N. W. 803, the syllabus is as follows:

"Munoskong Bay, about six miles long and five and three-fourths miles wide, is connected with Mud Lake at its upper end. The distance from the head of Mud Lake to Lake Huron, with which it connects at its lower end, is 24 miles. Munoskong Bay is navigable for boats drawing 10 feet of water. The waters of the bay and of Mud Lake are on practically the same level as Lake Huron and rise and fall with it. Held, that the bay is part of Lake Huron, subject, as far as concerns the boundaries of riparian lands, to the rules of law governing the Great Lakes and not of St. Mary's River, which flows into it."

The court quotes with approval from the opinion of the lower court as follows:

"Manifestly the river as such, in legal effect, does not reach either Detour or Point Iroquois. The widening waters at either end between these points are on the level of the Great Lakes. They connect with and rise and fall with them, have irregular shores and a broad expanse of several miles, contain in places many islands and are subject to storms and waves which render their navigation in small boats dangerous and, at times, impossible, and they present the general characteristic of the numerous inlets and bays connected with the Great Lakes."

In *Ne-Pee-Nauk Club vs. Wislon*, 96 Wis. 290, 71 N. W. 661, the Supreme Court of Wisconsin holds that a small stream which

spread into a body of water 25 to 65 rods wide and three miles long and then re-appeared as a stream, the surface being covered with water in the spring and fall and marshy and partially dry in the summer and being filled with rushes and wild rice, and navigable only by small skiffs, with no defined channel and no current during the greater part of the year, was not a water course, but a meandered lake. The court says in its opinion:

> "It is said that the controlling distinction between a stream and a lake or pond is that in the one case the water has a natural motion—a current—while in the other the water course is, in its natural state, substantially at rest, and this entirely irrespective of the size of the one or the other. But not every sheet of water in which there is a current from its head towards its outlet is therefore a stream. Angell Water Courses, 6th Ed. Sec. 4f. It is said that even the large lakes have such a current."

In *Jones vs. Lee*, 77 Mich. 35, 43 N. W. 855, the court draws a distinction between a river and a lake as follows:

> "A river is characterized by its confining channel banks, which give it a substantially single course throughout. A lake occupies a basin of greater or less depth and may or may not have a single prevailing direction."

In *Chamberlain vs. Hemingway*, 63 Conn. 1, 27 Atl. 239, the court quotes a considerable number of definitions of a river taken from various cases, some of which are as follows:

> "A river is a considerable stream of water that has a current of its own, flowing from a higher level, which constitutes its source, to its mouth, where it debouches." The Garden City, 26 Fed. Rep. 766.

Also:

"It may sometimes be dry, but in order to be within the above definition it must appear that the water usually flows in a particular direction and has a regular channel, with bed, banks or sides."

Also another definition:

"A large stream of water flowing in a channel on land towards the ocean, a lake or another river; a stream larger than a rivulet or a brook." Webster's Dictionary.

"A large inland stream of water, flowing into the sea, a lake or another river; a stream larger than a brook." Worcester's Dictionary.

"A stream flowing in a channel into another river, into the ocean or into a lake or sea." Stor. Dictionary.

"A large stream of water flowing through a certain portion of the earth's surface and discharging itself into the sea, a lake, marsh or another river." Imp. Dictionary.

The State of Wisconsin, from its attitude and the indications in the hearings before the Commissioner probably will place some reliance upon the case of *Norton vs. Whiteside*, 239 U. S. 144, 60 Lawyers Edition 186, the decision of the Circuit Court of Appeals in which case is *Whiteside vs. Norton*, 205 Fed. page 5. Whatever else may be said of this case, it is clear that the Supreme Court of the United States has not passed upon the question of where the mouth of the St. Louis River is, and the only consideration that came before this court was whether the decree in that case presented such a Federal question that this court would take jurisdiction, and the decision of this court was

that it did not. That was a case entirely between private parties and involving the private title to a little island that had arisen in a part of these waters, opposite Big Island, and most of the questions that were discussed in that case were with reference to riparian rights, the possible shifting of the State line by harbor improvements, etc. There was no decision of any court in that case that properly should affect a decision as to the State boundary between the two great commonwealths of Minnesota and Wisconsin. The trial court did not undertake nor did he decide as to where the mouth of the St. Louis River might be. In giving his oral decision, the trial court said:

> "Mr. Washburn in his argument has expressed a desire that I make a finding on the question of fact as to whether or not the waters here involved, lying between the shore line of the plaintiff on the one side and of the defendants Whiteside and Alexander on the other, are waters of the bay or arm of Lake Superior, that is, waters of Lake Superior or waters of the St. Louis River. I do not think it necessary to do this, because in my view the result must be the same in either case, but I will say that it seems to me that the river certainly extends to a point below the waters here involved, and indeed, although these waters are designated on the map of the government surveys as St. Louis Bay, yet, in view of the language used in the enabling act as to the northerly and northwesterly boundary of the State of Wisconsin and in view of the map therein referred to (Nicollet's Map), a copy of which is here in evidence, I would feel obliged to find that the St. Louis River extends to what is commonly known as the Wisconsin entry between Minnesota Point and Wisconsin Point and that its mouth is there."

In rendering his formal decision, the trial court on this point said as follows:

> "It is considered by the court that the St. Louis River is substantially correctly described in the bill of complaint

down to the falls above Fond du Lac or the Indian Village, but it is not considered by the court necessary in this case to determine where the river ends and the lake begins, nor whether the waters on the locus in quo are more properly described as waters of the lake or of the river, for, in the view of the court, the result in the case must be the same whether these waters are river waters or waters of an arm of Lake Superior. Whatever the character of these waters, the boundary line between Wisconsin and Minnesota would, in the opinion of the court, and it is so found, follow the main navigable channel between Big Island and the Minnesota shore; that is, between the shore line of the plaintiff on the one side and the shore line of the defendants Whiteside and Alexander on the other."

The trial court found and adjudged that the island in question belonged to Norton and found that his title went to the center of the navigable channel as improved by the government.

It will therefore be seen that the trial court in that case expressly refused to find where the mouth of the river was, although expressing the view that on the evidence then submitted he thought he would find that it was at Superior Entry. When the case reached the Circuit Court of Appeals, that Court seems to have seized upon this loose expression in the oral decision of the trial court as to the location of the mouth of the river and to have treated that as equivalent to a judgment based on a question of fact, although the trial court in its decree had expressly refused to find on the question, and then the Circuit Court of Appeals, in adopting the Superior Entry as the mouth of the river, proceeded to build up a line of reasoning which resulted in a reversal of the lower court's decision. The decision of the Circuit Court of Appeals appears to have been based upon this offhand remark of the trial court, coupled with an inspection of a very small photographic copy of Nicollet's Map, which was in evidence in that case, and reference to the Enabling Act

admitting Wisconsin into the Union. As we have before suggested, the reference in the Enabling Act to Nicollet's Map was only to locate the northwestern corner of the State of Wisconsin by reference to the Indian Village, as such Indian Village was shown on Nicollet's Map. There is no justification for saying that Nicollet's Map was referred to in the Enabling Act for any other purpose than designating the location of the Indian Village. Nicollet's Map did not show either the main channel of the Montreal River, the middle of Lake Superior, the mouth of the St. Louis River or the main channel of said river, nor, in fact, as we understand it, did it even show the first rapids above the Indian Village. But it did show the location of an Indian Village on the St. Louis River. This map did not even show Big Island, and from the very general character of the map and the language used it is plain that the only intention in the Act of Congress was to fix a method of finding the northwestern boundary of the State of Wisconsin by designating it at the first rapids above the Indian Village shown on Nicollet's Map, and not with any idea of attempting to locate the mouth of the St. Louis River according to Nicollet's Map, for Nicollet's Map did not show or purport to show the mouth of that river, nor where it commenced or ended. But in any event, there was little evidence introduced in that case as to where the mouth of the St. Louis River might be and nothing like the amount of testimony that is presented to the Court in this case on that point, or as to the character of the waters here involved. We have before the Court here the evidence as to the location of the mouth of the river from a scientific standpoint, from the maps hereinafter referred to, showing that in laying down the State line these waters were considered as a part of the lake rather than as a part of the river, and the evidence of many witnesses that the mouth of the river was always considered, amongst the people, as being at Big Island Furthermore, it will be noted that even in the above mentioned case there was no judgment or final decision, or even a conclusive opinion, as to just where the mouth of the river was, except that Circuit Court considered, for the purposes of

that case, that it was in all probability somewhere below the little island involved in that suit.

That action was brought in the United States District Court of Minnesota. If then, as the Circuit Court of Appeals thought, the property involved was in Wisconsin, it is doubtful whether the court had any jurisdiction at all over the property, even if the decision concluded personally the private parties immediately involved.

V.

ACQUIESCENCE.

All the maps in common use, showing the State boundary, of which there are many, published from the earliest days down to the time this controversy arose, some published by authority of Wisconsin, some by authority of Minnesota, some by prominent citizens of Wisconsin and some by prominent citizens of Minnesota, all without exception show the State boundary running through the center of these waters, midway between the shores.

From the evidence introduced, it appears that many maps had been published prior to the time this controversy arose, both by the State of Wisconsin and the State of Minnesota and by prominent citizens at the Head of the Lakes, and in every instance where the State line was laid down on these maps at all it was invariably laid down as running midway between the shores through these waters. This line so shown is, throughout its course, very nearly coincident with the dredged permanent channel as finally improved by the United States government.

One of the very first maps showing the State line so laid down was published by James Bardon, a prominent citizen of Superior, Wisconsin, who located at the Head of the Lakes in the earliest times and has been perhaps the prominent citizen of Superior ever since. All of the atlases and plat books published in the two cities which delineated the State line, always delineated it midway between the two shores, and likewise the State maps published by Wisconsin and Minnesota so showed the State line. This shows the acquiescence of the people in this being the boundary line until the present controversy arose, and the real occasion of this controversy was the attempt of owners on the Wisconsin shore to reach out and claim valuable dock property on both sides of the navigable channel as improved by the government, thus attempting not only themselves to get to the navigable channel on their own side, but to reach over and claim the title to valuable dock property on the Minnesota side and shut off the Minnesota owners from access to any line of navigation. The map which was published by James Bardon was commonly known as the "Bardon Map".

Minnesota Exhibit 2 is a copy of this Bardon Map. The original was withdrawn from the record and Minnesota Exhibit 27, a photographic copy, was substituted therefor (see Record p. 294, original transcript p. 419). This particular copy was produced by the witness John G. Howard (p. 55) and was published in the early '70s, Mr. Bardon having published them from year to year with the dates of publication printed thereon according to the year of issue. The particular copy produced was one that had been in the possession of Mr. Howard's father, a pioneer of the early days, and Mr. Howard testified that this line was considered by everybody in the early days to be the boundary between the two States (p. 56).

record shows that Captain Gaillard may have had on the question was the fact that the 1886 map and the 1891 report contained the words "main channel", but when it is taken into consideration that the wording of the 1886 map was changed immediately thereafter ,and that Mr. Darling's idea of the main channel was shown to be based on an entire ignorance of what the proper criteria of such a channel were, that information is of small effect compared to oral testimony. We have no hesitancy in saying that, in the absence of a showing that he understood the rules of law applicable, or had any information upon which he could have based a reasonable and logical conclusion, the letter of Captain Gaillard has no probative force in this case. Here, as at the beginning of our argument on the many extraneous matters brought into Wisconsin's brief in this connection, we state that it is impossible on its face that the Corps of Engineers should have even attempted to determine the boundary line between two states. That boundary line is determined by the main channel of navigation, and that navigators and not engineers are best qualified to testify as to navigation is vividly shown by the testimony of the one engineer that Wisconsin called at the hearing. As Captain Gaillard stated at the end of his letter: "This is a question which the War Department is without jurisdiction to decide", and, we may add that he, the last of the long line of engineers stationed at Duluth before the channel was finally straightened, was the only one who ever presumed to express an opinion on this question admittedly beyond their jurisdiction. We venture that seldom has the Corps of Engineers been argued to be the arbiter of disputed boundaries between states; and that only Wisocnsin's emergency in view of the oral testimony would have brought forth this argument.

Counsel then fall back to what may, in the language of modern warfare, be referred to as their "strongpoint". It is that the Wisconsin Boundary Commission of 1911 believed that the maps of the Corps of Engineers were decisive in Wisconsin's favor. There can be no question that the Wisconsin Commission relied

on these maps, but their ideas are hardly binding on Minnesota, and we believe that we have shown those ideas to be based on a misapprehension of the purpose and effect of those maps. Neither the maps nor reports of the Corps of Engineers, nor what the Wisconsin Boundary Commission thought of these maps, is going to determine this case, but it will be determined, as under the authorities it most certainly should, by the testimony of competent witnesses under rules of law that have been settled by this and other courts.

Counsel close their discussion on this point by a sharp criticism of our emphasis on a settlement that will do equity and justice, or, using the language they quote, "on a broad and practicable basis, so as to preserve to each state and the citizens thereof access to the navigable and navigated waters." We believe that the time has not come—and we venture never will come—when equity and justice will cease to have great weight in courts of law. And, as to counsel's vehement objection to the argument quoted last above, we can do no better than reiterate the very clear language of Wisconsin's Supreme Court in the *Franzini* case, quoted supra, that the idea embodied in the Enabling Act permitting a state bordering on a navigable river to come into the Union is that *"there shall be for all time preserved within its boundary one-half of the main navigable channel of the river."*

5. *The oral testimony is in line with Minnesota's theory of this case, and beyond all question shows that the so-called Milford channel was not the main channel of navigation, and therefore not the boundary line.*

We shall discuss together the fifth and sixth points argued by counsel for Wisconsin. The oral testimony has been fully brought to the court's attention in our main brief, and we would not deem it necessary to reply to Wisconsin's brief on this point in the case, were it not for the glaring misstatements in that

brief as to the actual evidence given, and the unwarranted inferences and conclusions that counsel for Wisconsin claim is established by the evidence.

Indeed, as to nearly every witness on whose testimony they comment (where they do not purport to quote the testimony verbatim), they in substance misstate the facts testified to by the witness on some important point, and conclusions are put into the mouths of witnesses, for which there is no foundation in the record of any nature or description, as we read that record.

In fact, the liberal use of language by counsel wherein they have garbled the testimony and have taken a fragment from the testimony of a witness here and another fragment there, and pieced these fragments together, and drawn conclusions therefrom, calls to mind the old saw that "Volubility is often times an enemy to thought."

It is true that counsel who have submitted the brief for Wisconsin took no part in the taking of the testimony, and neither saw nor heard a single witness testify, but that fact hardly accounts for the curious statements and curious manner of making statements found in their brief concerning the evidence, some of which statements will be called attention to hereinafter.

Counsel start out on this point by saying that the consideration of the problems of this action by the court may well end before considering the oral testimony, and, after reiterating their altogether fallacious conclusion that the Corps of Engineers has determined the boundary line between Minnesota and Wisconsin, they inveigh against what they call "the jumbled impressions of many witnesses as to what they did or saw, from a quarter to a half century antecedent to the making up of the record before the court."

There can be just one reason why counsel for Wisconsin object to the consideration by the court of the oral testimony—

the oral testimony does not support Wisconsin's case. A record of more than one thousand pages was made in this case. On the question as to the mouth of the river counsel expressly ignore the oral testimony, and on the question as to the channel counsel discuss that evidence only after apologizing for doing so, and after raising an objection to the court's consideration thereof.

As to the oral testimony in this case we have this to say in reply to the point of view of the present counsel for Wisconsin. If the "main channel of commerce" "the one usually followed", "'the navigable and navigated channel" is the state line, then the testimony of navigators is clearly and unquestionably the best possible evidence as to the location of that line. That a navigator is the best judge of navigability and navigation is too clear for argument. That his evidence is the best and most relevant is equally clear. That evidence is subject to cross-examination and is taken under oath. There can be no question, Wisconsin's counsel ardently to the contrary notwithstanding, that the oral evidence should not only be considered, but, in cases of this kind, is practically decisive. Assuming for argument's sake a conclusion that is not justified by the evidence, or the outside matters brought into the argument by counsel, viz. that the maps and reports of the engineers and early explorers are contrary to the oral evidence, there can be no question that such evidence is superior in weight to that of the maps and reports, particularly when it clearly appears that the makers of the maps and reports could not have known of or appreciated the questions involved. This point seems clear beyond peradventure, and Minnesota's position is amply supported by the decision of this court in the case of *Missouri vs. Kentucky*, 11 Wall, 395, quoted supra, where it is expressly held that if the evidence from maps and reports of travelers is different from that of living witnesses based on facts, "the latter is to be preferred."

We shall discuss first the evidence introduced by Wisconsin. That evidence was fully commented upon in our main brief, and

no extended reply is necessary in this brief. On page 278 of their brief counsel say:

> "Wisconsin witnesses, of same character as those from Minnesota, and nearly double in number absolutely corroborate and confirm uniform trend of official reports, surveys and locations of boundary line."

and again on page 354 they say:

> "It thus appears that the witnesses for Wisconsin who testified as to the channels of navigation customarily employed were of the same general average character, as to experience and intelligence as the witnesses who testified for Minnesota and there being some 28 or 29 were about double in number."

We take it that counsel in the language above quoted mean to refer to the alleged "locations of boundary line" by the Corps of Engineers. We have already referred to counsel's method of assuming a point not proved as a basis of further argument; in this connection we reiterate that the Corps of Engineers did not locate the boundary line between Minnesota and Wisconsin, and that counsel's restatement of this improper conclusion serves only to show the weakness of their argument. Nor can we agree that the fact that Wisconsin called more witnesses than Minnesota indicates that Wisconsin's case is stronger than that of Minnesota.

Counsel's statement that Wisconsin's witnesses were of the same character and experience as those of Minnesota is unquestionably wrong. Witness after witness called by the State of Wisconsin freely admitted that he did not and could not know

nearly so much about the waters in question or the channels in those waters as did the captains and navigators called by the State of Minnesota. It would serve no useful purpose to reiterate in this reply brief the qualifications of the various witnesses called by Minnesota and Wisconsin, in view of the fact that those qualifications are fully commented on in our main brief. Minnesota called all of the living boat captains that could be found who were familiar with early navigation in the waters in question, and their testimony wholly and without any doubt disproves Wisconsin's theory that the Milford channel was the main channel of navigation. Wisconsin called a few of the leading citizens of Superior, but they did not claim to be navigators and expressly denied any knowledge of channels or courses comparable to the knowledge of the men who made their living by navigating these waters. Outside of these prominent citizens, Wisconsin produced a number of witnesses who cannot be properly called otherwise than riffraff. By this characterization we do not mean any disrespect to the State of Wisconsin or its counsel in this action, but we submit to the court that a reading of the record in this case and of the briefs submitted by Minnesota and Wisconsin will prove beyond any doubt that the witnesses called by Wisconsin were not, as a whole, at all qualified to testify in this action, and that their testimony bears no fair comparison to that of the navigators and captains called by Minnesota.

Indeed it is very noticeable that counsel, as they go through the list of witnesses for Wisconsin, start in with an apology for those witnesses or their method of testimony. Counsel finally hang their hopes in this case on the testimony of Hiram Hayes, James Bardon, Victor Desimval, John Stevens and J. H. Darling. The testimony of these men is dealt with fully in our main brief, but in view of counsel's reliance thereon we shall take the court's time to reply briefly as to their testimony in this brief.

On page 157 of their brief counsel say that the testimony of Hiram Hayes "may come more nearly to deserving the char-

acterization of being the exclusive testimony as to the location of the boundary line." This quotation is typical of counsel's enthusiasm. The following quotation from the examination of Mr. Hayes by counsel for the State of Wisconsin who tried this case is significant:

> "Q. You didn't navigate the water yourself, did you, with deep water boats so that— A. No. I did not.
> Q. You had no occasion to become familiar with the channel then yourself, did you? A. I didn't. I was not familiar." (Record p. 464).

In other words the testimony of a witness who, by Wisconsin's own examination at the hearing, did not claim to be familiar with the channels, is now argued to be decisive of the question at issue in this case. Hiram Hayes was not a sailor, was not an engineer, did not claim to know the channels, and did not claim to know the way he went on his excursions. His testimony was of the most general character, and he frankly admitted that his knowledge did not compare in accuracy with the knowledge of the captains called by the State of Minnesota. (Record page 472). He testified that, in going up the river in excursion boats he took the south channel, and in coming down he came "not far from the Minnesota side." Even if this were true it fails to show that the Milford channel was the main channel of navigation. In the face of his admitted lack of qualifications the testimony of Hiram Hayes has very little, if any, force whatsoever.

James Bardon was not a sailor, was not an engineer, did not claim that he knew the course followed and could not give the directions on the map. Counsel, on page 159 of their brief, admit that Mr. Bardon stated that he could not describe the course taken, and add: "We think it doubtful whether any witness could testify with particularity after such a lapse of time."

The statement of counsel is not unfair as to men like Mr. Hayes, Mr. Bardon, Mr. Darling, and practically all of Wisconsin's witnesses, who are not argued to have been navigators at any time, but it is hardly fair as to the captains who navigated these waters freely and almost exclusively. As to them we think the court will agree that it is not only not strange, but in fact very likely that they should remember the course taken. The truth of counsel's statement depends upon the qualifications and experience of the particular witness to which it refers.

We have commented at length in our main brief on the testimony of Mr. Bardon. (Page 259 ff., Minnesota's Brief). Mr. Bardon's testimony as to the main channel is summarized in the language from the record there quoted where, in answer to an extremely leading question, Mr. Bardon said that he "guessed" the Milford channel "was the main channel if it was the deepest water" and further stated that he didn't know where the deepest water was. Mr. Bardon also freely admitted that he was not as competent as the men called by Minnesota to testify as to the navigation of the waters in question (Record page 784), and, all in all, his testimony offers no real support to Wisconsin's theory of the case.

Victor Desimval was the very aged Frenchman, upwards of eighty-five years of age, who owned a little sawmill at Milford in the early sixties. He too, in counsel's enthusiastic language, is "indeed almost the sole reliance of the court for really accurate information as to conditions in the region which most strongly claims our interest and attention." (Page 166, Wisconsin Brief.)

We have discussed Mr. Desimval's testimony quite fully in our main brief (pages 27 ff., Minnesota Brief), and it is not necessary to go over that testimony again. Suffice it to say that his experience with navigation merely as a marine engineer on a little flat-bottom boat drawing three and one-half feet of water,

for a few months' time, hardly qualified him to testify as to the channels in St. Louis Bay.

Counsel, on page 160 and 161 of their brief refer at length to a statement made in our main brief that Desimval's testimony was contradicted by that of two dozen witnesses.

What was said in our main brief concerning two dozen witnesses and the testimony of Desimval was as follows:

> "The old gentleman was absolutely wrong in his testimony concerning the cut-off channel because he said it was so shallow that nothing but row boats could use it.
> Q. Now in the 'cut-off', what is known as the 'cut-off', that water was only deep enough, as I understand it, for row boats and canoes? A. That is all." (pp. 242, 243).

On this testimony in our main brief we add the following comment:

> "Compare that testimony with the testimony of at least two dozen other witnesses testifying in the case, claiming that boats drawing six, seven or eight feet could and did take this channel and the soundings show this to be the fact, and that the water was deep enough for these boats is demonstrated by the record." (Page 243).

We also, on page 238 of our main brief, set out the following testimony of Mr. Desimval:

> "Q. And is that the course that boats generally took then? A. That is the only course for boats to take. The other one is nothing, what they call the cut-off is nothing only for row boats and canoes."

And in our main brief we have this comment:

> "Of course this testimony cannot be true, as probably more than two dozen witnesses testified that all the traffic in the early days was over the channel marked A-G-B-C on Defendant's Exhibit 1, and furthermore his testimony shows that outside the Manhattan, which went up the Bay at one time (he says just one trip) (See page 709), the boats that he was familiar with did not draw more than three or four feet of water and there was no necessity of their taking any channel at any place. He testified as to his own experience as an engineer on this little flat bottom boat." (Page 239).

This language then was the excuse for the comment of counsel found on page 161 of their brief in which they say:

> "First of all we waive all criticism of the fervor that transformed the total of fifteen witnesses into twenty-four. Examination however, has already disclosed that of the fifteen witnesses who were produced by Minnesota, ten of them, John J. Jeffry, George Lloyd, H. G. Inman, John H. Norton, F. A. Brewer, Alexander McDougall, C. W. McManus, D. E. Stevens, Albert Swenson and John Howard laid no claims to any experience in navigation nor any actual knowledge of the situation, as we understand their testimony, prior to 1870."

In the first place we did not say that the two dozen witnesses who testified to a statement of fact showing that Desimval's statements could not be true were witnesses called by the State of Minnesota for, as a matter of fact, many of the Wisconsin witnesses contradicted him absolutely and the actual soundings showed that his testimony could not be true. Furthermore, under

the decisions of the court, in the absence of a showing of avulsion, the boundary line would be the varying center of the channel, and it is of no importance whether the witnesses testified as to conditions prior to or after 1870.

John Stevens is also greatly relied upon by Wisconsin. His testimony is commented upon at page 276 of our main brief, and shows beyond all question that his memory was so defective as to make that testimony of no value whatsoever. We think that no comment on the testimony of Mr. Stevens is necessary in this brief.

We have already briefly referred to the testimony of J. H. Darling in this brief, and have fully discussed that testimony in our main brief (page 192). His testimony alone, or with the maps which counsel desire to link up with it, does not support Wisconsin's case, and, in fact, as we have already pointed out, serves to prove not only that these maps did not purport to show the boundary line, but also that Mr. Darling had no appreciation of the factors which, by the decisions of the courts, determine the boundary line in cases of this type. Mr. Darling also specifically admitted the superiority of the qualifications of the witnesses called by Minnesota. (Record page 617).

Thus, of the five witnesses referred to on whose testimony Wisconsin relies so strongly, three admit that the witnesses produced by Minnesota were better qualified on the questions involved in the instant case, and the qualifications of the other two speak for themselves. Even taking counsel's enthusiasm and facility in coming to conclusions into consideration, it is hard to see just how they can claim that Wisconsin's witnesses were of the same character and experience as those of Minnesota. A reading of the testimony introduced by Wisconsin speaks more clearly than any argument thereon in this connection, and we shall not prolong this discussion by further consideration of that testimony.

Nor is it necessary to make any reply argument concerning the testimony introduced by Minnesota, except only to call the court's attention to the confusion attempted to be injected into the case by counsel for Wisconsin as to what Minnesota claims as the state line, and to some of the inaccurate and misleading statements made concerning that testimony by counsel for Wisconsin.

As stated in our original brief, the contention of Minnesota is that the "navigated and navigable channel" from the beginning was on the line shown on our Exhibits 1 and 3, and marked in red. At the time Congress established the boundary of Wisconsin in 1846 the only survey that had been made as to a channel, was made by Lieutenant Bayfield in 1823 to 1825. His "track survey" showed the channel above Grassy Point and to the easterly of Big Island substantially, if not exactly, on the line claimed by Minnesota as the channel, that is from Grassy Point to the "forks", so to speak, to the easterly of Big Island. In 1846, at the time the State line of Wisconsin was established, the knowledge derived from this map was the only knowledge of a channel that Congress had or could have had. The Nicollet map does not aid in any way in ascertaining the channel. At the time this state line was established Bayfield's "track survey" had been published at least twenty-one years.

And as we now understand the situation, there is no dispute between the parties to this litigation in so far as the channel running south of Big Island is concerned. This island was patented to the State of Wisconsin, no claim was ever made to it by the State of Minnesota, and under the holdings of this court from the beginning down to the present time there is an unbroken line of decisions establishing that no matter where the original channel might have been, as fixed by Congrees, Minnesota is estopped by her acquiescence to raise any question now as to the state line being north of Big Island down as far as the "forks", so to speak, to the easterly of Big Island.

But counsel seem to argue here and there in their brief, (and at other times seem to abandon such argument) that because we do not claim that the "cut-off", or channel south of the Island, is the state line, Minnesota is also estopped to claim that the state line is anywhere in any channel that is connected with this "cut-off", or south channel.

As we stated in our original brief, we do not discuss nor care to discuss the question of the "cut-off", or south channel, being the state line. The matter is foreclosed and we concede it. But we do claim that the main channel of commerce and state line, to the westerly of Grassy Point, runs to the "forks" to the easterly of Big Island, and then extends from the "forks" along the channel B-C to north of Big Island.

As we understand the situation, practically every witness called by the State of Minnesota, and some called by the State of Wisconsin, who had been navigators on these waters in the early days, described the main navigated channel from Grassy Point to the "forks" and then either through the "cut-off", or to point C to the north end of Big Island; that is, instead of their failing to testify as to the channel from B to C, on Minnesota's Exhibits 1 and 3, as claimed by counsel for the State of Wisconsin, they specifically and affirmatively did testify to such fact.

At the risk of undue repetition, but as we think it will aid the court in its labors, we wish to call attention briefly and in a condensed form, to the testimony of the witnesses called by the State of Minnesota as to the channel from the "forks" going north of Big Island, which counsel in their brief claim is wanting in this case.

Mr. John Howard testified specifically to this several times. See especially page 50, folio 18; see also his testimony on page 51, and his cross-examination; see page 54, on which page he says:

"Q. How much water did the boat draw? A. Oh, I should say she drew six or seven feet.

Q. What channels did you use in navigating that boat? A. Why, we used the channel from A to C.

Q. A to C? A. Yes, sir; and then on up."

Again he testified:

"Q. Calling your attention to the line in red, marked A to B, and extended on from B to C, I will ask you what that line indicates? A. That line indicates the course of the channel that was taken to go up the river, to take the north channel.

Q. Prior to the time— A. Prior to the time there was any dredging done." (Page 57, folio 29).

He refers to this channel time and again elsewhere in his direct testimony as well as in his cross-examination.

The next witness on this point was Alfred Merritt, who testified specifically time and again that the main line of travel when he was on these waters was the line A-E-G-B to C, as claimed by Minnesota. His testimony was:

"A. Oh, yes, it was a good deal straighter; it was a better line, sure.

Q. And practically all the traffic took that line? A. Yes sir." (See page 114).

And he referred to this channel frequently in his testimony thereafter. (See also our brief in chief). Mr. Merritt was recalled and testified as to the comparison of the traffic that went up the line claimed by Minnesota, as compared to that going up channel H. He testified:

"A. I think nine-tenths went up this way, just a rough guess.

Q. You would say nine-tenths would go up this line A-G-B; that would include what turned off and went up the "cut-off"? A. Yes.

Q. And what went up the line B-C? A. Well, I should say nine out of ten of the boats went up this what they called the short-cut.

Q. Then there would be a larger proportion including those that went up here, A-G-B-C, if you combine those with what went on the short-cut? A. Yes, I think so. Nothing went that channel only as we went here to this dock.

Q. That is, you are referring to the channel marked H? A. Yes." (Record, page 978, fol. 1527).

In the face of this testimony we cannot see why counsel should make the comments they do and draw the conclusions they do from the testimony of Alfred Merritt.

We now consider the testimony of Captain Benjamin F. Howard, on the channel B-C. He testified specifically that practically all the traffic that went up as far as Big Island went on the channel claimed by Minnesota, and while most of it went south of the island, on the "cut-off", yet all of the traffic that went north of the island went on the Minnesota channel A-B-C. (See Record, page 158),

It perhaps is unnecessary to state that all three of these witnesses just referred to, John Howard, Alfred Merritt and Benjamin F. Howard, testified that Channel H was only used as far as Milford, and they came back the same way as they went in. And indeed they all testify, as do the other competent witnesses, that the bar and sharp turns at the upper end of channel H were of such a nature that at times it was very difficult, if not impossible, to get through. Attention has been called to this testimony in our brief in chief.

The witness Albert Swenson was very familiar with these

channels and these bays, and had *"worked all over them for years"*, although not a naviagtor. He testified specifically to the routes; that the boats traveled over the line claimed by Minnesota A-E-G-B-C. See testimony on page 178 and elsewhere.

Again he testified concerning the route traveled by boats:

"Q. It was the short route. Now, when you get down here to near Grassy Point, and from the point that was marked C to A on Minnesota's Exhibit 3, the shortest route there is the route that you have described on this map with a pencil, isn't it? A. Yes, sir.

Q. And that shows depth of water seven, nine and ten feet, desn't it? Seven, nine and ten feet. (Pointing on the map). A. Yes." (Page 190).

He then testified that he supposed that the reason they took that route was because it was the shortest, although he did not know. He answered:

"Yes. I have seen them go, I have seen them do it, and I knew they did it, and the reasons they had for it I didn't know." (Page 191).

The next witness we call attention to is Darwin E. Stevens. He specifically testified that in going from Grassy Point to Fond du Lac, that practically the universal practice was to use the Minnesota line, whether you went north or south of the island. He specifically stated that if you went on the north of the island you went on the line marked B-C. (See page 213).

C. W. McManus specifically testified that in the early days of navigation practically all the travel by Grassy Point to Fond

du Lac went over the Minnesota channel, and when the boats came to the "forks", to the easterly of Big Island, they either went the "cut-off" to the south of Big Island, or went the channel B-C to north of Big Island. This witness' testimony conclusively shows that he always traveled the Minnesota channel whether he went north of Big Island, or the "cut-off" south of Big Island. See page 228 and elsewhere; also see page 232.

Captain McDougall, while not referring to the course the boats took after they reached the "forks" and going up the Minnesota channel, yet he conclusively establishes the fact that there was no travel of any kind on channel H, except to the Milford Dock, and the unavoidable inference is, in fact, conclusively established by his testimoney that boats going north of the island must have traveled on the channel B-C.

The next witness on the line of travel from B to C is Frank A. Brewer. He specifically testified, both on direct and cross-examination, that this was the channel used. See Record, page 127; also our brief in commenting on his testimony, pages 130 and 131.

John H. Norton was the next witness to whose testimony we would call attention on this point, and he specifically testified that the Minnesota line on Exhibit 3 was the channel that was used from A to C, which included that from B to C. See Record, page 274; also see page 275; see also our brief in chief, pages 133 and 134.

We now call attention to Martin Wheeler's testimony on this point. He time and again testified that they always traveled on the Minnesota line from A to B, and if they went north of the island they went on the line B-C, or if they wanted to take the short-cut they went south of the island. He testified:

"Q. What channel do you mean? A. It would be this one to the right of this island. The dividing point would be about here. Is that B? (The point B is the "forks").

Q. Yes. A. That's about where, if they were going to the north of the island, we would go around this way.

Q. That is, if you were going to the north of the island you would go along the line B-C or substantially that? A. Yes, about that. If we were going to Fond du Lac, generally took what you call the 'cut-off' channel." (See Record, page 951).

And he testified on this point and to this effect on pages 952 and 953.

Captain Inman testified on this point as follows, after stating that if they went north of the island they traveled B-C, and if they went south they took the "cut-off":

"Q. Do you know whether other boats took this same channel that you took, from A to G and from G to B and B to C, and if they went the short-cut, from B to D? A. There weren't so very many boats, but that was the way pilots taught me to take.

Q. Did you ever in all of your experience take this channel H? A. No, sir, I did not in those days." (See Record, page 966).

We call attention to the testimony of George Lloyd. He specifically testified that with reference to the travel up above the "forks", or "junction", as he called it:

"Q. You called that the "junction"? A. This is the short-cut.

Q. That is the line from B to D, if you were on the "cut-off"? A. Yes, sir.

Q. Then when you went north of the island which route did you take? A. Right around here. (Indicating).

Q. That would be B to C? A. B to C.

Q. *Now did you ever use the channel H, being the channel that went up to Milford, that is when you went clear up the bay?* A. *No, sir.*" (Page 969).

Captain Jeffrey specifically testified that when they went north of the island they took the "forks" channel, B to C. See pages 994 and 995.

Not only did practically all of the navigators that were called as witnesses by the State of Minnesota testify to this channel B to C, but the witness Captain Ed Smith, called by the State of Wisconsin, who was born in Superior, Wisconsin, lived on those waters all his life, had been been a navigator practically all of his life, and was at the time of the taking of the testimony a captain on the steamship "*America*", navigating on Lake Superior, testified, if he testified to anything, that in the early days the channel was as claimed by Minnesota. We call special attentention to his testimony at pages 544 and 545. See our comments upon his testimony in our main brief, page 165. On page 285 of their brief counsel apologize for Captain Smith as ignorant. He was not ignorant. He is now and for many years has been the captain of a large passenger steamship plying on Lake Superior; the only evidence of his "ignorance" was the fact that he testified to the Minnesota channel as being the one used.

In the face of all of this testimony we do not understand why counsel should make the statements they do with reference to the testimony showing no channel of commerce from B to C.

We shall now call attention very briefly to some of the inaccurate statements made by counsel concerning the evidence introduced by Minnesota.

On page 219, in speaking of the testimony of John Howard, they say:

> "Indeed, as we understand his testimony went to the length of asserting the obvious physical impossibility that boats drawing ten to twelve feet took the cut-off channel."

On page 229 they leave out any qualification as to their "understanding", and get so strong in referring to the testimony of Mr. Howard as to say, "It will be recalled, testified, that boats, 'lots of them', went through the cut-off channel drawing ten to twelve feet."

The testimony of Mr. Howard does not justify any such statement as that used by counsel. Counsel, on cross-examination, asked him concerning the course of boats at a specific point on the map, and the following took place:

> "Q. And as a matter of fact all boats drawing ten to twelve feet of water that went up there followed that channel? A. Oh, no, *not all boats;* they go up this other channel, lots of them.
>
> Q. Well, in the south channel, before this was dredged out at this point? A. Yes, sir.
>
> Q. There is seven feet marked at the crossmark immediately on the line between B and D, about half way between those points; there appears to be only seven feet of water, according to this map, isn't there? A. Yes, sir; that is just below the line.
>
> Q. Just below the line?
>
> Mr. Fryberger: Mr. Hudson, did you say that was before it was dredged?
>
> Witness: This was never dredged. You mean before this was dredged?

Mr. Hudson: Before this was dredged, here? (Indicating).

Mr. Fryberger: There was no dredging there, was there?

Witness: I do not think so. This never was dredged." (Indicating). (See Record, pages 70 and 71).

Mr. Howard at no time testified, nor attempted to testify that he himself, or anyone else of whom he knew took boats through the Minnesota channel before dredging or any other channel, that drew over eight feet of water, and the confusion all arose on the question of *"all boats"* going one way.

In commenting upon the testimony of the witness Benjamin F. Howard, counsel say, on page 230 of their brief:

"He never knew of any boat drawing six feet of water going between the point marked C, and the deep water in toward Milford.

It is an incontrovertible physical fact that in the early '90's there was a shoal place north of Fisherman's Island, over which there was a depth of approximately four feet, which extended all the way to the main channel at Grassy Point. And yet, if the testimony of this witness is to count for anything, he must persuade the court that he navigated a boat across this area with a draft of seven feet."

As we understand this statement, there is no evidence in the record of any nature or description to justify any such assertion.

In Captain Benjamin F. Howard's testimony, as found at page 150 of the record, he testified that they followed the Minnesota channel, the one that went north of the island, up to the point C, as shown on the Meade map. (See Record, page 158).

The Meade map shows soundings all the way up the Minnesota channel from A to C, of not less than eight feet in depth. Witness after witness testified to the narrowness of channel H, and that such cannel H had a depth of eight feet only near point C. Witness after witness, all boat captains, testified to the difficulty encounteed when attempting to get into the channel H, near the point marked C, owing to the narrowness and crookedness of the channel. There is a very sharp turn there, as shown by the evidence, and as indicated on the Meade map. But when it comes to any testimony showing that there were only four feet of water to the northerly of Fisherman's Island at any time, time, we claim that it is non-existent. In fact the Meade map, showing eight feet of water along the entire line of the Minnesota channel, backed up by the unquestioned testimony of all the captains who navigated these waters in an early day, establishes beyond doubt that the water to the northerly of Fisherman's Island at all times was at least eight feet deep instead of four feet, as contended by counsel. Indeed, as we understand it, counsel use the Meade map as showing the proper soundings when they think it is to their advantage, and repudiate the Meade soundings when they think it is more beneficial for their case so to do.

On page 241 of their brief counsel make the statement that Captain McDougall testified that he had no experience as to the Minnesota channel, and further add: *"Again he testified to his entire ignorance of the so-called Minnesota channel."* On page 299 of their brief they get a little stronger and say that Captain McDougall had never heard of the channel, and on page 364 of their brief they get still stronger—"Alexander McDougall who never heard of the line B-C."

Let us consider for a moment what Captain McDougall's testimony really was, with reference to the Minnesota channel in the disputed territory. At the bottom of page 235 of the Record he delineates the line taken in the usual course of travel by boat

up as far as the "Forks". Then he was asked with reference to channel H:

> "Q. Now was there a navigable channel right next to Grassy Point here on this curved line which is marked H at one point? A. Where do you mean?
> Q. I say was there along there? A. A channel?
> Q. Yes. A. Not that I know." (Record, page 236).

It was this channel H that the witness was testifying about when he said he had never heard about it until the dredging was done at the point C. *He never even intimated at any time that he had never heard of the Minnesota channel.* Instead of that he testified squarely to where it was in the disputed waters, time and time again.

On his cross-examination it is perfectly clear that counsel for Wisocnsin understood that Captain McDougall testified that he had no knowledge of channel H and counsel understood that Captain McDougall was not referring to the Minnesota channel or any part of it when he said he had not heard of said channel.

That Mr. Gard, counsel for Wisconsin who conducted the hearing on its behalf, fully understood what Captain McDougall was talking about when he said he had not heard of channel H, and that the statement of counsel on the brief is clearly something that has originated since the trial or the taking of the evidence, is clear from a reading of the evidence in this connection.

> "Q. Now, Captain McDougall, as I understood your evidence on direct examination, you stated *that you did not know of a channel marked on this Meade map H.* A. That I did not know there was one?
> Q. Yes. A. No, I did not, honestly.
> Q. I just want to get it on the record; I am not ques-

tioning that you did not know it, Captain. *But you stated that you did not know of the channel marked H on this map?* A. No channel marked on that map now.

Q. Will you read the soundings through that? A. That shows a deep hole in the bay, that is all.

Q. How long is it? A. That is not a channel.

Q. Just wait, Captain. How long is it? A. I don't see the channel there by looking at that chart.

Q. You don't see that channel marked H there, that is, that red ink, marked H? A. I see that H plainly enough.

Q. But you do not see the channel there? A. I do not; no, sir.

Q. And you don't know that there was any channel there? A. I never knew there was.

Q. Do you have any reason to question the soundings on this map, that purport to have been the Meade soundings? A. I have no question but that is correct, just as stated.

Q. Just as the map shows it? A. Yes, I think probably it was that way." (See Record page 251).

He then testified how he would run in going up the river. (See page 252).

It is perfectly clear from the testimony of Captain McDougall that it was channel H that he had never heard of, instead of the Minnesota channel as stated by counsel. We fail to see how this extremely misleading and inaccurate method of making statements can help Wisconsin in this case, or aid the court in coming to a conclusion that is fair to both states.

On page 313 of their brief counsel for Wisconsin make the following statement:

"And this Captain Jeffry, the court will recall, brought confusion to the ranks of Minnesota's witnesses by testifying with great force and directness to the fact that whatever course was taken above Grassy Point, *it was necessary to cross the so-called bar opposite Milford, which there has been so much earnest and labored effort to picture as an obstruc-*

tion that rendered navigation of the Milford channel impossible. Upon the basis of Captain Jeffry's testimony, there was no reason or motive for undertaking the course from B to C, except the scant saving of about nine hundred feet of distance."

All we ask this court to do in this connection is to take the Meade map, look at the soundings running from the Wisconsin shore to the Minnesota shore to the easterly of Big Island and it will see that there is a line of soundings running about eight feet or at least nothing deeper than eight feet the entire distance. This is not a matter that is open to argument or admits of argument. It is demonstrated by the soundings on the Meade map that this bar or shoal of eight feet of water extended across the entire bay whether you took the cut-off south of the Island, whether you took the channel B-C and went north of the Island, or whether you took channel H. It was the shoal that had to be crossed in getting up and down from Grassy Point to Fond du Lac before dredging was done, and this was the shoal that was testified to by Captain Jeffry.

Counsel say on page 252, referring to Captain Jeffry's testimony:

"And he had previously testified to his familiarity with the Milford channel. Asked as to this so-called bar—

Q. Did you run over it very often? A. Oh, I suppose a good many hundred times in my life.

Q. Had no trouble to go over it? A. No, sir." (Wisconsin's Brief, page 252).

Nothing can be more misleading than this statement of counsel that Captain Jeffry testified that he had gone down the

channel H or Milford channel a good many hundreds of times. As we have said before, counsel who wrote this brief did not hear Captain Jeffry testify, but we cannot understand how any one can read the testimony of Captain Jeffry and yet make the statement that we have just referred to. We have referred to his testimony quite freely in our main brief, but at the risk of undue repetition and to aid the court we would like to refer briefly to his testimony here.

The difficulty with counsel's statement is this. Captain Jeffry testified the shoal place extended from the Minnesota shore to the Wisconsin shore below Big Island, at least wherever the boats had to cross, no matter whether you took the cut-off south of the island, the Minnesota channel north of the Island, or even if you attempted to go down the Milford channel at the point C. In his direct testimony he testified that they took the Minnesota channel westerly of Grassy Point on the lines A-G, B-C, etc. (See Record bottom page 994, top of page 995). He testified:

"Q. If you wanted to go the cut-off you would go which side of the little island? A. I would go on the south side. *If I wanted to go up the river I would go on the north side.*

Q. About how many feet from the Island? A. Pretty close to it either way.

Q. Is that the route that all of the boats took in the early days? A. Yes.

Q. Before the deep channel was dredged so that they could get down there with the scows of lumber? A. Yes.
* * *" (See Record, page 995).

He then testified specifically that he never came into the Milford channel to haul his logs for Desimval except when he hauled them out from the channel itself and not above. His reply is this:

"A. Not unless he had them into Milford and wanted them pulled out of there.

Q. He is mistaken about that? A. He is mistaken about that unless he had put some logs down off the hill-top, which the old man Desimval did drop some down where the Duluth Heights used to come out just west of that he let them down with a line for his own little mill. Whether the young fellow ever logged down there I don't know. Did he say what mill I delivered them at?" (Record page 995).

It is perfectly clear from his testimony that he never at any time used channel H or the Milford channel except to pull out logs that were deposited in the Milford channel, but that he always went on the Minnesota channel and either north or south of the Island and the "many hundreds of times" that he crossed this "*eight-foot depth*" was when he was coming down the channel B-C. It is not a matter that is open to argument on this testimony. The testimony demonstrates that that is what the witness said.

On his cross-examiantion counsel try to get him to say that he had never used the channel north of the Island coming down on the Minnesota channel B-C but he did not testify as counsel wished. Counsel asked:

"Q. Then it was just occasionally you went north of the Big Island? A. No, I towed a lot of logs that was put in below the westerly end of the cut-off.

Q. When was that? A. Different years; some years more than others; they used to put in them days. It was pine all through. Wherever there was a batch of logs they told me to go and get them and I would get them if the tug could get over the bottom.

Q. You know where the main channel of the river is above Grassy Point? A. The way I used to go the main channel when I would go up I would strike, just as I say, *to the north of the little island.*" (See Record page 998).

Looking at the Meade map will demonstrate that he could not go anywhere near the little island by taking channel H, but the only way to go near the little island was to take the Minnesota channel.

Again counsel asked him:

"You heard them talking about the bar up northerly or up above that little island ,that Pancake Island, didn't you, at that hearing? A. Yes. We never had any name for that island. You call that Pancake.

Q. Some of them did. It's in the vicinity of the Zenith Furnace Company. A. It is almost abreast, I guess.

Q. You heard them talking about a bar in the channel? A. There was a flat place there.

Q. You heard somebody testify that they couldn't get over that, didn't you? A. No, I don't know. I don't who done that. I always got over it." (Record, page 998).

Here it will be seen that counsel is trying to get Captain Jeffrey to testify that there was a bar in the Minnesota channel running from B to C near Pancake Island. He said he "had no trouble getting over it."

Now, let us follow up his testimony on this point.

"Q. You always got over it? A. Yes.

Q. Had no trouble in getting over it? A. No, not if I kept in the right place. I have taken men up and showed them the way up, and tend to my business coming down, and they would run on coming down.

Q. Did you run over it very often? A. Oh, I suppose a good many hundred times in my life.

Q. Have no trouble getting over it? A. No, sir," etc. (Record, page 999).

The present counsel for Wisconsin try to turn a plain statement of the witness showing that he went over the Minnesota channel hundreds of times to a statement that he went over the Milford channel hundreds of times, when exactly the reverse is demonstrated by the testimony of the captain. Again Captain Jeffry testified as to this shoal place having to be crossed no difference how you went from Grassy Point to Fond du Lac.

He said:

"Q. As I understand you, when you towed from Fond du Lac all above from Spirit Lake you always came the cut-off route? A. Not always but most of the time.

Q. When would you not come the cut-off? A. Sometimes I would get a long string, maybe three or four batches of logs. Sometimes they would get a tail on me. I wouldn't get the right swing. The curve wasn't just as I expected to find it. We all get fooled in our business, in that way, and I would have to drop down and come down the other way; *go north of the little island instead of south.*" (Record, page 1000).

This shows conclusively that he was not talking about the Milford channel.

"Q. That would be just occasionally? A. Not very often. After awhile we put a sheer boom so they wouldn't do that on me. Had to have it fixed so any other boat we wanted to pass or let the scow through they could let it loose.

Q. You have navigated that main channel over next to the Minnesota shore above Grassy Point? A. Very little.

Q. But you have navigated it? A. Yes, sir. I have navigated all of the water up there that was fit for a boat to float.

Q. There was plenty of water down there, wasn't there? A. There was down near the point, (Grassy Point), yes, sir.

Q. There was all the way up, wasn't there? A. *You had the same flat water as you did going through here. Same flat place I don't care which way you went.*

Q. You had plenty of water between Grassy Point and that bar, didn't you? A. Yes, sir." (Record, page 1000).

Here again is a demonstration by the testimony of Captain Jeffry that the bar he referred to that you had to cross to get up to Fond du Lac was the irregular shoal shown on Meade map that extended from the Minnesota shore to the Wisconsin shore to the southerly of Big Island, but above all, the testimony of Captain Jeffry demonstrates that while he knew of the Milford channel he practically never used it except for the purpose of going into *"Victor's Landing"*, as he called it, to tow out logs from around Milford, but he never used it for the purpose of going up or down to Fond du Lac.

Again his testimony demonstrating, in so far as he was concerned, the shoal place or bar that you had to cross, no difference which channel was taken, is found at page 1001 of the Record, where he says:

"Q. *So far as you know all the boats go over that bar that you spoke of above this little island, that went northerly of Big Island? A. They either went there or else they went through the cut-off or they didn't get up to Fond du Lac.*"

Continuing, he testified, on redirect:

"Q. As I understand it you went up the channel that you described, *the one that you said you always took up*

around this little grassy island—you had been up there hundreds of times haven't you, north of that island? A. Yes, I would be safe enough to say that.

Q. And you had no trouble in getting over there with the Nellie Cotton drawing six and a half feet? A. No." (Record, page 1001).

There is absolutely no doubt from the testimony of Captain Jeffry that the Minnesota Channel from B to C was the channel that he had traveled hundreds of times, nor is there any doubt that his testimony demonstrates that he never used the Milford channel except to tow logs out of the lower end of the channel and in doing this he would go in Milford or channel H, as far as the Desimval mill and take the logs out to Grassy Point in the same way as he went in, but he never used this channel in going up the river.

The inaccuracies which we have pointed out are among the most glaring examples of the extent to which counsel's enthusiasm have caried them. Minnesota's witnesses, nearly of them navigators and captains on these waters, testified that the only navigation of the Milford channel prior to 1893 was to go and come to the little Milford mill, and that all the other traffic went either to the south or north of Big Island. Whether a larger or smaller part of the traffic went to the south or north of Big Island does not matter so far as this action is concerned, for in neither case can Wisconsin prevail and accomplish her purpose of procuring the improvements on the Minnesota shore line.

After discussing the testimony of Minnesota's witnesses counsel on page 260 of their brief, offer a supposedly different theory, apparently with the idea that their conception of what the evidence proved needed support from other sources. Their theory here is that there was more current in the Milford channel than in the channel contended for by Minnesota. As a mat-

ter of fact, we think the overwhelming evidence establishes that the current was practically the same over the entire bay to the easterly of Big Island. Several witnesses for Wisconsin attempted to claim that there was more current in the Milford channel than in the other parts of the bay, but the evidence of competent witnesses is so overwhelmingly against this contention that the matter requires no further argument. See on this point our main brief and the testimony there called attention to.

But even if counsel's point be granted, that point is but a re-statement of their theory that the line of deepest soundings controls. It is utterly inconceivable that Congress should have determined the state line on the presence or absence of a current —particularly when, as here, it is shown that the navigable and navigated channel was elsewhere than in the place the greater current is claimed to exist. This theory is equally out of line with the decisions of the courts as to the boundary line between states bordering on a navigable river with that of the "deep water" premise upon which is based. Counsel's purpose, here as elsewhere, is to get far afield from the oral testimony as to actual navigation. We reiterate that the theory that the line of deepest soundings controls the state line cannot possibly be the law, and is supoprted by no adjudicated decisions of any court whatsoever.

In summarizing, on page 354 of their brief, counsel do not claim that the bulk of traffic was through the Milford channel, but say:

> "It being apparent that, roughly classified, the *bulk of traffic* testified to by Minnesota's witnesses was through the cut-off channel, while the *bulk of testimony* offered by Wisconsin's witnesses related to navigation in what the consensus of expression by witnesses for both states rather uniformly characterized as the main channel."

It is Minnesota's position that the so-called Milford Channel, in the absence of proof that it was the main channel of navigation prior to 1893, cannot be the boundary line between the states of Minnesota and Wisconsin. The record shows clearly and beyond all doubt that this so-called Milford channel was not the main channel of navigation; on the contrary, all the commerce, by the overwhelming preponderance of the evidence, was on a line marked A-G-B on Exhibit 1, and thence either north or south of Big Island. Whether the boundary line is north or south of Big Island is not vital to Minnesota's position in this action, for in either case the claims of Wisconsin are entirely defeated.

Counsel's "epitome of argument" on this point is typical of their method of presentation. As to the Meade map they say:

> "General Meade, after a detailed and comprehensive survey, indicated the course of the 'state line' so plainly that, as a Minnesota witness put it, 'of course anybody looks at the map can tell that that is the deepest water' ",

thereby reiterating their completely fallacious theory, upon which Wisconsin's case is based, that the "deepest water" is the "state line" regardless of navigation thereon. Then counsel refer to the various surveys of the Corps of Engineers, all of which we have fully discussed in this reply brief. Their conclusion that the channel so surveyed was reported as the state line is, we submit, incorrect in fact and supported by no fair inference from the many extraneous matters that counsel have brought into their argument. Finally they fall back on the geological map of 1914, which, being made after this controversy arose, of course can have no bearing one way or the other on the ques-

tion at issue here. The significant fact in counsel's epitome is that there is not a single reference therein to the thousand pages of oral testimony taken in this action. Here, as throughout their brief, counsel for Wisconsin completely ignore the fundamental factor in this type of cases, and base their argument on inference and conjecture that is far from satisfactory and cannot, under the authorities, be compared with the testimony of men who admittedly *knew* concerning the things whereof they testified.

We submit that Minnesota's position as to the main channel of navigation, "the navigable and navigated channel", stands precisely as stated in our main brief, and unaffected by the far conjectures and sub-issues that counsel would inject into the case. We have considered these conjectures and sub-issues fully, perhaps too fully, in this brief. They all serve to show Wisconsin's case to be based on a misconception of the law, as well as upon a lack of equity, which it is submitted to the court, is the most extreme in all the books. It is admittedly inequitable and supported by an obvious desire to appropriate property of great value on the Minnesota shore. We believe and respectfully submit to the court that this is one of the cases where the law and equity of the questions involved lead to one and the same conclusion—a conclusion that will give to each of two rapidly developing communities an equal advantage in the thing that is clearly their most valuable common right. *A holding that the Milford channel was the main channel of navigation flies directly in the face of the testimony of every experienced navigator whose evidence was introduced in this case, and would completely ignore the criteria of navigability and actual navigation. Without such a holding Wisconsin cannot prevail.*

In conclusion, we respectfully and confidently submit that a decision for Minnesota on either of the grounds specified in our

briefs is in accord with both the facts and the law applicable, as well as with that high measure of justice which we believe should be accorded in this case.

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Of Counsel:
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H. B. FRYBERGER,
OSCAR MITCHELL,
LOUIS HANITCH.

IN THE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1918.

No. 16, Original.

STATE OF MINNESOTA, COMPLAINANT,

vs.

STATE OF WISCONSIN.

MOTION TO SET CAUSE FOR HEARING.

By CLIFFORD L. HILTON,
Attorney General
for Complainant.

FRANK B. KELLOGG,
of Counsel.

IN THE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1918.

No. 18, Original.

STATE OF MINNESOTA, COMPLAINANT,

vs.

STATE OF WISCONSIN, DEFENDANT.

MOTION TO SET CAUSE FOR HEARING.

Now comes the complainant, State of Minnesota, and would show unto the court that the proof in this case has been completed, and that the original transcript of same has been filed, and that same has peen printed under the supervision of the clerk of this court and printed transcript filed.

Complainant, therefore, moves the court to set this

cause for hearing at as early a date in October term, 1919, as to the court may seem proper.

Respectfully submitted,

STATE OF MINNESOTA,
By CLIFFORD L. HILTON,
Attorney General.

FRANK B. KELLOGG,
of Counsel.

FILED
MAR 11 1919
JAMES D. MAHER,
CLERK.

Supreme Court of the United States

OCTOBER TERM, 1918.

No. 16, ORIGINAL.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

BRIEF FOR STATE OF MINNESOTA.

CLIFFORD L. HILTON,
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Huntley-Bassett Printing Co., Duluth, Minn.

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FIRST.

The waters in question are a part of Lake Superior or an arm thereof. The mouth of the St. Louis River is southwesterly of Big Island. The boundary line, as fixed by the acts of Congress, through the center of Lake Superior, is therefore through the center of these waters, midway between the shores 7

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SECOND.

Assuming for the purpose of argument only that the waters to the westerly of Grassy Point and easterly of Big Island are river waters and not bay waters, the evidence establishes beyond a reasonable doubt, in our opinion, that the State line is located in the "navigable and navigated channel", insofar as the disputed territory is concerned, far to the south of all dock property reaching out from the Minensota shore, and if this contention is true, the claims of the State of Wisconsin in this suit are entirely defeated 86

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Supreme Court of the United States

OCTOBER TERM, 1918.

NO. 18, ORIGINAL.

STATE OF MINNESOTA, Complainant,

vs.

STATE OF WISCONSIN, Defendant.

IN EQUITY.

BRIEF FOR THE STATE OF MINNESOTA.

This case is brought for the settlement of the State boundary in the waters known as Upper and Lower St. Louis Bay, lying between the cities of Duluth, Minnesota, on the north, and Superior, Wisconsin, on the south, at the western end of Lake Superior.

Minnesota maintains that the State line boundary through these waters is the center line or line midway between the shores of these two bays, the waters being the head of Lake Superior.

Wisconsin contends that the waters in question are a part of the St. Louis River and that the boundary line is the thread of that river, and contends the boundary line in Upper St. Louis Bay is a sinuous line with many curves and con-

volutions but in the main hugging the Minnesota shore and through much of its course cutting far inside of and northerly of the government dock line established on the Minnesota side, thus giving Wisconsin ownership and jurisdiction not only out to its own dock line but across the government improved navigable channel and on beyond, embracing a considerable part of the property inside the Minnesota dock line. In Lower St. Louis Bay, which is easterly of Upper St. Louis Bay, Wisconsin concedes, as we understand it, that it is simply a broad expanse of water of about a uniform depth clear across and makes no serious contention that the boundary is otherwise than through the center of the bay.

Minnesota maintains that even if it should be held the waters in question are a part of the Saint Louis River, and not an arm of the Lake, nevertheless the main navigable and navigated channel and therefore the State line, for most of the distance, is on a line substantially midway between the shores.

At the westerly end of Lake Superior there are three pairs of points or projections from the opposite shores of Minnesota and Wisconsin. Starting from the east going west, we first find a pair known as Minnesota and Wisconsin Points. Minnesota Point is a long narrow strip of land, from two or three hundred feet to perhaps seven or eight hundred feet in width and projecting from the Minnesota shore in a gradual curve for a distance of seven or eight miles. Opposite this, on the Wisconsin side, is a much shorter point, known as Wisconsin Point, and between the two is what is commonly known as the "Entry" or the "Superior Entry", a natural opening of about a quarter of a mile or a little more in width. Near the Minnesota main shore a canal through this point was cut about the year 1870, known as the Duluth Ship Canal, and through these openings the traffic from Lake Superior to the cities of Duluth and Superior enters. About a mile to a mile and a half westerly of the last mentioned points there is another pair of points reaching out, one from the Minnesota shore known as Rice's Point, and one from the Wis-

consin shore known as Connor's Point, with water, something less than a quarter of a mile in width, intervening. Just beyond, the waters widen out to a width of a mile and a half to two miles for a distance westerly of between three and four miles, until another pair of points is reached, commonly known as Grassy Point, the main projection at this place being from the Minnesota shore, and at this place there is an opening something like a quarter of a mile in width, and beyond, the waters again widen out to a width of from half a mile to two or three miles, if measurements be taken from the indentations on the shores.

Big Island, containing several hundred acres, is at the westerly end of these waters, some three or four miles from Grassy Point. It is at the southwesterly end of Big Island that Minnesota contends the lake ends and the river begins, that is, the mouth of the river. Westerly from Big Island, a distance of a couple of miles, is the village of Fond du Lac (Head of the Lake), formerly an Indian village and trading post of the Hudson Bay Company, the location of which was marked as "Indian Village" on Nicollet's Map, hereinafter referred to, and several tepees were indicated on the map in connection with the name.

The Enabling Act, permitting the people of Wisconsin Territory to form a Constitution and a State government, was approved August 6th, 1846, (9 U. S. Stat. at Large, p. 56), and the Act of Congress of May 28th, 1848, admitted Wisconsin to the Union (9 U. S. Stat. at Large, p. 233), and in these acts the boundary was described, so far as here important:

> "thence through the center of Lake Superior to the mouth of St. Louis River; thence up the main channel of the St. Louis River to the first rapids of the same above the Indian Village, according to Nicollet's map." (pp. 3 and 4 of the Record.)

The Enabling Act for Minnesota was approved February 26th, 1857 (11 U. S. Stat. at Large, p. 166), and the act admit-

ting Minnesota to the Union was approved May 11th, 1858 (11 U. S. Stat. at Large, p. 285), and the Minnesota acts specify that the boundary is on the boundary line of Wisconsin, so far as here important (p. 4).

It will therefore be seen that if, as Minnesota contends, the mouth of the St. Louis River is at Big Island, then these bays are a part or an arm of Lake Superior and the boundary runs through the center of these bodies of water. If, on the other hand, the mouth of the St. Louis River is, as Wisconsin contends, between some of these pairs of points, then the questions remain: What is the main channel through these bays?—(1) whether it is the line of deepest water, and (2) if so, where that line is, or (3) the main navigable and navigated channel if this is at any point divergent from the line of deepest water, and (4) if so, where that line is, and (5) what is the boundary line in these waters in that portion where admittedly there is simply a broad expanse of water of nearly uniform depth with no defined channel or current, which is true of a considerable part of the waters in question?

In the last twenty-five years the United States government has improved and dredged a channel twenty-two feet in depth through these waters between the dock lines which it has established on the Minnesota and Wisconsin sides. A line through the center of these bays and miwday between the shores of the two States adjoining, lies between the dock lines established by the United States government and at most points substantially on the same line as the channel improved and dredged by the United States government. If, therefore, as Minnesota contends, the boundary between the States is through the center of these waters, the people of each State are able to reach the present improved navigable channel, the owners on each side may improve to the dock lines on the respective shores and where improvements are extended and docks built out to the dock lines there will not arise the intolerable condition of having a single

business on the dock subject to the laws, civil and criminal, and the taxation of the two States and the ordinances and regulations of two cities. On the other hand, if the contention of Wisconsin be adopted, the State boundary line twists like a snake, around and through the dock lines on the Minnesota shore, several times through and across the channel improved and dredged by the United States government and leaves small areas of Wisconsin, which would consist of dock ends, on the Minnesota side of the government improved channel, which channel, as above stated is, in the main, midway between the two shores. Wisconsin's contentions would also leave small portions of Minnesota southerly of the improved navigable channel. The line contended for by Wisconsin would prevent the Minnesota shore owners from reaching the improved navigable channels at all in many instances, but would allow the Wisconsin shore owners to own and occupy the property within the dock lines on both sides of the improved channel. If, in any such places, the shore owners on the Minnesota side acquired the title out to the dock line from the proprietors on the opposite bank, so as to carry on a dock business from the Minnesota shore and have access to the navigable channel as improved by the government, such shore owners would still be subject, in their single business established on such dock, to the criminal and civil laws and taxation of two States and the ordinances and regulations of two cities. Justice and common sense, therefore, would dictate that the State boundary should be midway between the two shores, giving the people of each State and the shore owners equal access to the line of navigation and preventing a multitude of complications in taxation, conflicting laws, city ordinances and regulations and questions of title, to be determined, perhaps, generations hence by attempts of the courts to locate exactly where some imaginary line of deepest water or ancient navigation may have run, since, by the government improvement of the course about midway between the shores, the line that Wisconsin claims as that of deepest water has long since been filled in and obliterated and docks and substantial structures have been built clear across that line to reach the point of navigability.

The people of both States acquiesced in the State boundary being at this center line, where every one of the twenty-five or thirty maps introduced in evidence, marking the State boundary, shows it to be, midway between the shores, since the admission of Wisconsin in 1848 down to about ten years ago, or a period of fully sixty years.

About ten years ago, a dispute, between private claimants, having arisen over a little island which had formed and appeared above these waters at the westerly end of St. Louis Bay, a suit was commenced in the United States Court and a decision rendered between those owners in the year 1913, on the strength of which Wisconsin decided it was justified in reaching across to the Minnesota shore and attempting to tax certain dock end property on the Minnesota side. *Whiteside vs. Norton*, 205 Fed. 5.

About the time this question arose, the legislatures of the two States appointed commissions to attempt to settle the boundary, but they were unable to reach an agreement (pages 8 and 9 of Record). Numerous actions have since been commenced and are now pending between shore owners on opposite sides of these Bays, and many more are contemplated, to determine the ownership of certain dock ends and riparian property. (See bill of complaint, p. 7 and answer, p. 18). All these suits appear to have arisen because of the *Whiteside vs. Norton* decision, above referred to, and the great confusion occasioned thereby. Prior to that decision, Minnesota had exercised jurisdiction, in taxation and otherwise, to the center of these waters, and in its answer Wisconsin "admits that the rights and powers exercised, or assumed to be exercised, if any, by the complainant or its taxing officers, were not challenged by the defendant, or its taxing officers prior to the year 1913" (p. 16 Record).

It may be said at this point that Nicollet's Map, made about the year 1842, while it does designate the location of the Indian

Village, does not locate or indicate the mouth of the St. Louis River, and the map is of a very general character. The reference in the act admitting the State of Wisconsin to the Union to Nicollet's Map seems to have been merely for the purpose of locating the Indian Village thereon shown, from which location the first rapids in the river above the same, as one of the boundary points, could be determined. The words "according to Nicollet's Map" would appear to have no signification as fixing where the mouth of the river was or where Lake Superior commenced.

FIRST.

Minnesota maintains that these waters are a part of Lake Superior, or an arm thereof, and that the mouth of St. Louis River is at the southwesterly end thereof at Big Island, and that the boundary line between the two States, as fixed by the Acts of Congress, is therefore through the center of these waters, midway between the shores, thus giving each State a substantially equal access to the navigable and navigated channel, based upon the following propositions, established by the evidence:

I. The waters of Lake Superior, and not of the St. Louis River, are dominant at the boundary line in question.

A. The waters all along the disputed boundary are of the same level as the waters of the lake, and it stands undisputed that if all the water coming down the St. Louis River should be diverted or dried up, the waters in these bays would still remain at approximately the same level they now have.

B. The oscillations and changes in the lake surface affect thsee boundary waters as far as the westerly end of

Big Island, but not substantially above that point.

C. The waters in these bays flow in both directions and their movement is not always in one direction as is the case in a river.

D. The waters of the bays are subject to the ebb and flow of the true tide of the lake.

E. The waters of all of Lower St. Louis Bay are a broad expanse of nearly uniform depth, with no line of deepest water. The waters of Upper St. Louis Bay are likewise a broad expanse of somewhat more varying depth, but with many channels and lines of navigation, having more the characteristics of an end or border of a lake than of a river.

F. Such currents as there are in these bays are found mostly at either end of the bays and are due to the action of the water when forced up or down through the narrow openings between the pairs of points, just as is the case where there is a narrow water connection between two lakes. They are lake currents, flowing at times in opposite directions, rather than river currents flowing in one direction.

II. The physical characteristics of the shores of these waters are those of a lake and not of a river. There are no well-defined banks, but the shores are full of large indentations and bays and are distinctly different from the well-defined banks of the St. Louis River westerly of Big Island. The contour of the shore of the western end of Lake Superior for a hundred miles or more is that of a body of water gradually narrowing to a point. This contour brings this point approximately at Big Island and not twelve or fourteen miles to the easterly, where the width of the lake is still eight or nine miles.

III. These three pairs of points, projecting from opposite shores, were, according to scientific evidence and the evidence of

tradition, formed *in the lake.* What was once a part of the lake must still be a part thereof, notwithstanding the formation of points projecting therein, even under the description of these waters as being a "drowned river", advanced by the Professors of Wisconsin University. It follows that if there ever was a river at this point it was drowned and obliterated ages ago *by the waters of the lake.*

IV. From a scientific as well as political standpoint, the mouth of the river is where the waters thereof cease to descend and reach the level of the waters of the lake and become a part thereof. This point is at the head of Big Island. The common understanding of the early settlers likewise placed the mouth of the river at this point.

V. All the maps in common use, showing the State boundary, of which there are many, published from the earliest days down to the time this controversy arose, some published by authority of Wisconsni, some by authority of Minnesota, some by prominent citizens of Wisconsin and some by prominent citizens of Minnesota, all, without exception, show the State boundary running through the center of these waters, midway between the shores.

VI. The common understanding of the citizens, from the admission of the two States until this controversy arose, a period of about sixty years, was that the boundary line lay through the center of these waters, midway between the shores. During this time the authorities of the two States and the two cities in these States, acquiesced in this boundary, until in 1913 Wisconsin attempted to reach over the line into Minnesota for taxation purposes. The United States government, in the establishment of dock lines and harbor improvements, recognized the midway line as the natural dividing line, and in this the States and the people thereof acquiesced.

VII. The Acts of Congress defining the boundaries of the States do not locate the mouth of the St. Louis River. Its location at the westerly end of Big Island answers every call in these acts, in entire harmony with the language of the acts; settles the question once and forever in the simplest and most just way, by giving the two States and the two cities in the two States and the shore owners in the two States, equal access to the navigable and navigated channel as improved by the United States government, and avoids the intolerable condition of having the citizens of Minnesota cut off from access to navigation and business properties used as units subjected to the control and jurisdiction, civil and criminal, of two States and the ordinances and regulations of two cities and the taxation of personal property employed thereon in two jurisdictions. The fixing of any other than the midway lines as claimed by Minnesota, would work endless confusion, cause endless litigation for years to come as to just where the real line is, unless the court should cause it to be definitely and permanently marked on the ground or in the water, and would extend the police and criminal jurisdiction of each city and State across the intervening waters to cover small areas and dock ends on the respective opposite shores. The midway line as claimed by Minnesota would lie wholly in the navigable water between the dock lines on opposite shores and would occasion no more confusion than does the exact location of the center line in any other part of Lake Superior.

The foregoing propositions are established by the maps and written records introduced in evidence and by the testimony of witnesses, whose evidence on the different points we shall review under the various headings. As the testimony of these witnesses under the various headings will be briefly referred to, before considering the various headings we wish to introduce to the court the witnesses, whose testimony is so relied upon.

John G. Howard is 61 years of age and has lived at Superior and Duluth for 59 years. He was at one time a sailor and is now

engaged largely in the mineral land business, representing the Yawkey interests of Detroit. His father settled at the Head of the Lakes in 1855 and it was for his father that Howard's Pocket on the Superior side was named (p. 41-45). From the very early days John G. Howard was engaged in logging operations on these bays and worked on steamboats thereon (p. 47). He and his father furnished the first lumber for the Superior Court House, which is still standing (p. 47). The witness has in his possession several very old maps used in the early days and was thoroughly familiar with the usual line of navigation in the very earliest days.

Leonidas Merritt is a member of the famous Merritt family, who were pioneers in Duluth. He is a very prominent citizen, having been the builder, with his brothers, of the Duluth, Missabe & Northern Railway, extending from Duluth to the Iron Ranges, which is the famous iron ore railroad of Minnesota. He was at the time of testifying one of the five City Commissioners of the City of Duluth under the new form of commission government. He was the model for the sculptor who executed the statue on the steps of the State Capitol at St. Paul, illustrating the heroic form of the Northwestern Pioneer. All his life he has been greatly interested in geology, especially as it pertains to iron formations and the receding of the waters of the lakes, leaving iron deposits. He was 73 years of age at the time of taking his testimony. He served three years in the Civil War and has lived in Duluth 61 years, having come in 1856 at the age of 12 years. There were eight of the Merritt boys, three still living in Duluth (p. 82-83). He often piloted steamboats in the early days and was engaged in publishing maps in the eighties. He has given a great deal of study during all his life to the formation of the pairs of points jutting out into the lake.

Alfred Merritt is one of the most substantial citizens of Duluth and a member of the famous pioneer Merritt family. He was 70 years old on the 16th of May, 1917. He came to Duluth

when he was 9 years of age, about the year 1856. His family located at Oneota on St. Louis Bay and he became a sailor in his young manhood and was for years a pilot and navigated the waters in question until about the year 1882. He helped to haul the material for the contsruction of the first railway, the Lake Superior & Mississippi, in 1869. He was one of the principal builders of the Duluth, Missabe & Northern Railway, the famous iron ore road of Minnesota.

Benjamin F. Howard was a brother of the John G. Howard above mentioned. He was born in 1852 at Sandwich, Mass., and came to the Head of the Lakes in 1857. He was for a long time engaged in the lumbering business with his father and gives a very interesting account of pioneer lumbering operations (p. 152-153). He was an alderman of the City of Duluth for six years and President of the Council for two terms along in the nineties. He now lives in Manitoba.

Charles Krause is now a resident of Fond du Lac, Minnesota, and has been for about 60 years. He is engaged in the mercantile business at that point (p. 170-171).

Albert Swenson was born on the edge of St. Louis Bay in 1862 at what is now called Oneota (p. 176). He lived there until 1870 and then moved to Spirit Lake, which is just above Big Island. He has travelled these waters all of his life and knew all the early settlers (p. 178-179).

Captain D. E. Stevens has been a resident of Duluth for forty-eight years, having come here in 1871. He was for one term a member of the City Council of the City of Duluth and was for nine years a member of the Board of Education and was for many years a navigator on the waters in question.

Captain Alexander McDougall has been a resident of the city since 1871. He was inventor and builder of the famous

whaleback type of ship. Since the war broke out he has been building boats for the government at the large McDougall-Duluth Shipyards located on Upper St. Louis Bay, opposite Big Island. Previous to the time he located in Duluth, he was sailing Lake Superior as Captain on a boat. In 1868 he brought the first people to the Head of the Lakes to make the beginning of railroad construction. He had come to Superior on trips as early as 1863. He sailed the lakes until 1881 and since then has been engaged in shipbuilding and in 1888 built the first whaleback. He is one of Duluth's most substantial citizens and has a national fame in shipping circles. He has occupied many positions of trust and has represented both the Cities of Superior and Duluth before Congress with reference to navigation and harbor matters. He has lived both in Superior and in Duluth and was chairman of the joint commission to obtain harbor appropriations and acted with success (p. 247).

Frank A. Brewer was a member of the large lumber firm of Duncan & Brewer Lumber Company. At the time he testified in 1917, he was President of the Board of Education of the City of Duluth and has lived in Duluth since 1880. In his lumbering operations he was thoroughly familiar with these waters and was handling logs upon them for many years.

Solon J. Buck (p. 334) is Assistant Professor of History in the University of Minnesota and holds the position of Secretary and Superintendent of the Minnesota Historical Society and has charge of the records and files of that society, which was organized in 1849, and preserves material for the history of Minnesota and the Northwest in general. The society has moved into a new building erected at a cost of a half million dollars and has approximately 125,000 volumes. He produced several ancient records found in the files of that society, relating to these matters.

Professor F. W. Sardeson (p. 911) is a graduate of Minne-

sota University and for about sixteen years Professor of Geology in that University. He has been engaged in the study of glacial drift deposits in the State of Minnesota for the purposes of land classification or soil survey, and has written treatises, part of which are now published by the University. This work is being done by the United States Geological Survey in co-operation with the geological department of the University. He is United States Geologist and in connection with his work has studied questions of glacial drainage and questions of pre, inter and post glacial rivers; is associated with Mr. Frank Levered, United States Geologist, located at Ann Arbor, and has made a considerable study of what is known as the tilting theory or differential uplift, as applied to the beaches along Lake Superior (p. 913).

Martin Wheeler is at the present time a resident of Washington, D. C. He is 68 years of age and came to Duluth in 1855 and was one of the earliest and best known navigators traveling these waters (p. 948-949).

Luther Mendenhall is a lawyer and one of Duluth's earliest residents and most active business men.

Lawrence Martin was a Professor in the University of Wisconsin and testified in behalf of Wisconsin. Minnesota claims that his testimony, fairly considered, bears out all of Minnesota's contentions. He was Assistant Professor of Physiography and Geography and has been a student of geology at Cornell and Harvard. He worked around the Head of the Lakes in Wisconsin and Minnesota and published certain articles for the United States and Wisconsin Geological Surveys (p. 345-346).

E. F. Bean was a witness for Wisconsin and is Assistant State Geologist for the Geological Survey of Wisconsin (p. 386). Minnesota contends that his testimony, fairly considered, bears out Minnesota's contentions on the issues in question. Mr. Bean was graduated from Wisconsin University in 1909 and taught

physical geography in the Blaine High School at Superior for one year, and in that capacity conducted field excursions with his high school classes around the head of Lake Superior.

R. M. Hayes, an old resident of Superior, was called by Wisconsin, but he was not a navigator and was familiar only in a general way with the issues in question.

Henry S. Butler, a witness for Wisconsin, a lawyer, testified to certain points of Wisconsin law and certain matters with reference to taxation and claims of ownerships (p. 474-476).

J. H. Darling (p. 596) was formerly Assistant Engineer in the government office in the improvement of the Duluth-Superior harbor.

James Bardon (p. 763), a witness for Wisconsin, came to Superior in 1857; has held many offices in Douglas County, Wisconsin, having been County Treasurer, Chairman of the County Board, School Director and member of the City Council. In the early '70s he published one of the first, if not the first, maps of the territory at the Head of the Lakes, showing the State line through the waters in question midway between the Minnesota and Wisconsin shores, as Minnesota claims the line is, and all of the maps since, published by either Wisconsin or Minnesota or the citizens thereof, showing the State line, place it the same as the Bardon map.

John A. Bardon (p. 863), a witness for Wisconsin, was a younger brother of James Bardon. He lived in Superior since 1863, was a member of the Park and Workhouse Commission of that city and was the person in the employ of Wisconsin who looked up and gathered together the witnesses for Wisconsin.

The foregoing are the principal witnesses on either side who testified concerning the State line, the mouth of the river, the

general character of the bays in question, and who identified the maps introduced and gave the historical and scientific evidence relating to the State line. Many of them testified also as to the main navigated and navigable channel through these waters, but there were a considerable number of other witnesses as to this last point, and as to this matter it has not been attempted at this point to introduce those witnesses. We shall now take up and review briefly the testimony relating to the foregoing points by outlining the testimony given as to each of them.

I.

The Waters of Lake Superior, and Not of the St. Louis River, Are Dominant at the Boundary Line in Question.

A. *The waters all along the disputed boundary are of the same level as the waters of the lake, and it stands undisputed that if all the water coming down the St. Louis River should be diverted or dried up, the waters in these bays would still remain at approximately the same level they now have.*

B. *The oscillations and changes in the lake surface affect these boundary waters as far as the westerly end of Big Island, but not substantially above that point.*

It is without contradiction in the evidence that the level of the waters along the disputed boundary, clear from Superior entry to the westerly end of Big Island, where Minnesota maintains the mouth of the river is, are of approximately the same level as the waters of Lake Superior. It stands uncontradicted in the evidence and the witnesses for Wisconsin, as well as those for Minnesota, testified to the fact that if the St. Louis River should be diverted westerly into the Mississippi, the waters of

these bays would still remain at approximately the same level that they now have, which is the level of the lake. It therefore stands without contradiction that the lake waters along this disputed boundary are *absolutely dominant* and that neither their level nor their extent is substantially affected by the flow of the St. Louis River.

John G. Howard says, "The dead water, so to speak, continues as far up as Big Island. There is no particular difference in the color of the water between Lake Superior and these bays" (p. 52). Leonidas Merritt says, "Under ordinary conditions and except in spring freshets, the level of the lake and the level of the water in these bays is approximately the same. Logs put into these waters sometimes float one way and sometimes float the other, depending to some extent on the wind" (p. 90-91). Alfred Merritt says, "Logs in these waters float both ways. Blue lake water is in these bays. When I was on the survey of the Lake Superior & Mississippi Railroad (about 1868) we took a level up near Fond du Lac and when we got down to Minnesota Point we found the water at Fond du Lac was two feet lower than it was at Minnesota Point on account of the wind" (p. 120). Captain Alexander McDougall says, "The waters are substantially the same level as the waters of the main body of Lake Superior (p. 239-240). When the dike was put in from Rice's Point to Minnesota Point, it made no difference in the flow in or out of the Superior entry. It was just the same as it was originally, is now and ever will be, caused by the rise and fall of Lake Superior" (p. 247). Professor Sardeson says the lake is dormant up to Big Island and that the waters up as far as Big Island are controlled by the waters of the lake and those waters are dormant (p. 917). He says a river is a body of water that is long, relatively narrow and has a sloping surface and is controlled by banks and has a current; that these waters do not conform to that definition, as there is no sloping surface and the waters are level (p. 918). "In my studies I examined the banks of the river at Fond du Lac and I know that at a point somewhat

below Fond du Lac, to my certain knowledge there had been no rise in the river above, but below that point along the shores of the bay I could determine that there had been fluctuations there, due to the rise and fall caused by the wind or the tides in the lake" (p. 919). A quotation from a publication of Professor Martin, one of the witnesses for Wisconsin, was put in, with reference to the survey between the States of Wisconsin and Minnesota and the location of the rapids above the Indian Village as defined in the Constitutional boundary, where he says that when the survey was made in 1852 a Chippewa Indian informed George R. Stuntz, the surveyor, that there were rapids nearly opposite the village only a few years before, but that they could not be located at the time, and the surveyor accepted this statement as evidence that the lake level was rising, which resulted in giving Wisconsin a strip of territory a quarter of a mile wide and forty miles long that might otherwise have been in Minnesota. Professor Martin says, "But the decision was just, because the submergence of the rapids had commenced centuries before the boundary was even proposed" (p. 990). Professor Martin, of the Wisconsin University, says in his testimony: "Q. Now, just suppose that the St. Louis River was diverted, we will say at Cloquet, and taken off—just suppose a case—down into the Mississippi, all the water taken off down there, the height of the waters of the Bay of St. Louis would still remain just approximately the same as they are now, wouldn't they? A. Approximately the same." (p. 368). Professor Bean, a witness for Wisconsin, testified on this subject as follows: "Q. Now, this river, the St. Louis River, has nothing to do with the level in the bay; is that true? A. Very little. Q. If there was an opening there (at Superior entry), the lake would create the same level in the bay that exists now if there was no St. Louis River? A. Yes." (p. 409). He says further that even if the St. Louis River were diverted down into the Mississippi, the water in Upper and Lower St. Louis Bays, clear up to Big Island, would still remain approximately the same height as now and there would still be an inflow and outflow at the Superior entry, due to the winds, tides, etc. (p. 411). He says further,

speaking of Lake Pepin, that it is a river, speaking geographically and geologically, but that politically it would be known as a lake and he thinks it would be known as a lake in any Acts of Congress and anything of that sort, but that geographically speaking he thinks it may be considered a river (411, 412).

It will be seen from the foregoing testimony, coming from the witnesses for Wisconsin as well as those for Minnesota, and there is none to contradict it, that without any question the *waters of the lake are dominant* clear along the line of the disputed boundary and are not even affected by the water coming down the St. Louis River. That being so, it follows as a natural conclusion that waters whose height and area are in no manner affected by the waters of the St. Louis River can not properly be said to be a part of that river. The mouth of the river, therefore, should not be said to be out ten or twelve miles in these waters, but must be at the point where the flow of the St. Louis River joins these waters, which point is, in fact, at Big Island.

C. *The waters in these bays flow in both directions and their movement is not always in one direction as is the case in a river.*

John G. Howard says the currents in the bays are either way, up or down. The dead water, so to speak, continues up as far as Big Island, and there is no diffeernce in the color of the water between Lake Superior and these bays (p. 52). Leonidas Merritt says logs put into these waters will sometimes float one way and sometimes float the other, depending to some extent on the wind. "I logged up at Spirit Lake (which is just westerly of Big Island) one time and poled logs down to Patrick's (which is very close to Minnesota Point) and they would float back up towards Fond du Lac if they were given time. The usual current of the water is down until one gets to Big Island; below that there is no well defined channel and no well defined current" (p. 90-91). Captain Alexander McDougall says he has known a

current of water flowing through these entries of six or seven miles an hour in and six or seven miles out, covering the twenty square miles up to the mouth of the river at Big Island (p. 240). Frank Brewer says that he knows there is a rise and fall of the water in these bays (p. 261); that often he has had booms break and their logs would be scattered all over the two bays, Upper and Lower St. Louis Bay, and sometimes over Superior Bay and that they have found their logs as far up as Spirit Lake and up in Pokegama, from breaking of their booms at their mill in the waters below, and that when the booms broke the logs would be scattered both ways from the mill (p. 264) and the logs would float back west when the water was at normal stage (p. 265). Professor Sardeson says that from Big Island down the water in the bay is not running constantly in one direction but sometimes runs in and sometimes out (p. 921). Professor Martin of the University of Wisconsin, a witness for Wisconsin, says that the same current is found in the bays as is found in the lake and that the matter of the current is not a basis upon which one could classify as between a river and a lake (p. 369).

D. *The waters of the bays are subject to the ebb and flow of the true tide of the lake.*

Leonidas Merritt says that there are tides, so-called, that would back the water up in these bays and that the tides were of as much as six inches, and that unless there was a rush of water down the St. Louis River a tide of three inches would back the water up to Fond du Lac (p. 90-91). Alfred Merritt says in Upper and Lower St. Louis Bays there are tides; that he used to tow in these bays and when the tide went up he could tow very easily because he was not going against the current and when it changed he had to wait. He has seen the tide rise as high up as Fond du Lac. Logs in the bays float both ways (p. 120). The tide is from six to nine inches and there is a tide even in still water as shown by the government bureau (p. 139). Albert Swenson, who lived on the shores of these waters all his life, says

there are tides in these bays, regular tides, changing about every two hours continuously the year around; that is, the tide comes up for about two hours and runs the other way for about two hours. He does not know how far up a piece of driftwood would carry, but does know that in 1881 it carried him, a raft of saw logs and a horse for a distance of two miles; that the amount of the rise and fall depends to some extent on winds, but there is a regular tide back and forth regardless of the winds; that he has observed this at three culverts along the Northern Pacific Railway line, where he has often watched the rise and fall of the tides coming in for about two hours and out for about two hours and only still for a minute or so while it changed; that the wind has nothing to do with it any more than that when it is from the northeast the water rises higher than otherwise (p. 180-181). D. E. Stevens says there are tides in these waters extending up at all times as far as Fond du Lac, particularly during the summer time when there wasn't much water coming down the river (p. 214). Captain Alexander McDougall says that there are fluctuations caused by wind pressure or barometer pressure and while perhaps Lake Superior is not affected by what is known as a technical tide, yet that the water fluctuates like the water in a bathtub would, and that this occurs in all our lakes and more in the western end of the lake than most points that he knows of because of its peculiar formation, the finger-mark of the west end of the lake with a great long 400-mile sweep eastwardly of it; that as the great body of water outside these points rises and lowers and the two openings through Superior entry and the Duluth canal let the water in, it is affected in the same ratio that these openings will admit either the inflow or outflow from the enclosure within, and that this extends up to about the head of Big Island (p. 239-240). Frank A. Brewer says that there is quite a tide in these waters (p. 261-262). Professor Sardeson says that there are what he calls tidal actions in these waters nearly up to Fond du Lac and that the lake is dormant only up to Big Island (p. 917-918). Professor Lawrence Martin, of the University of Wisconsin, a witness for Wisconsin, testifies as follows (p. 349):

"Q. What do you say as to there being tides in Lake Superior? A. There are several kinds of movements of water here and one of them is a *true tide*. The geographer uses the name 'tide' only for the rise and fall of the water's surface in relation to the attraction of the moon or the sun and moon combined. Now, there is an actual tide of about three inches in the west end of Lake Superior. In addition to that, there is a rise of the water in relation to the blowing of the wind over the surface, and this you call a wind tide. The wind being from the northeast piles the water up at the west end of the lake, and then besides that there is a third thing that is called 'seiches' and that is a phenomena due to barometric pressure. * * * These three things can be told apart because you can measure the air pressure for the last one, you can discover the direction of the wind for the so-called wind tide and you can keep account of the time and know the position of the sun and moon in relation to what we call the true tide. * * * Q. What about what you call the true tide, is that noticeable in the bay? A. I am told that it is. I have never seen it but it is a very delicate matter to measure, because you have to take into account the complication of the other two when you measure and then compute when the moon would cause the big tide, but I am told that that has been carefully computed by the United States Coast & Geodetic Survey. Q. You say that the tide amounts to about three inches in the lake? A. Yes, sir. Q. Does it amount to about the same thing in the bay? A. I suspect that the three inches mentioned is in the bay rather than the lake." (p. 350). Hiram Hayes, a witness for Wisconsin, says, "I think it is true that there is a rise and fall in the lake and the bay level constantly and that this is called a tide." (p. 471). The foregoing evidence is without dispute and shows beyond a doubt that these waters are subject to the ebb and flow of the tide.

E. *The waters of all of Lower St. Louis Bay are a broad expanse of nearly uniform depth, with no line of deepest water. The waters of Upper St. Louis Bay are likewise a broad expanse*

of somewhat more varying depths, but with many channels and lines of navigation, having more the characteristics of an end or border of a lake than of a river.

John G. Howard says the shores have the characteristics of a bay rather than a river and these waters were always known as a bay rather than a river. There are many deep indentations on both shores, and these give the waters the characteristics of a lake or bay wholly, rather than that of a river (p. 53). The river was well defined down to Big Island and from the western end of Big Island it was just open water and one had to take a general course (p. 70). Leonidas Merritt says these bays have no defined channels; they are flattened out. "A bay is an arm of the lake and these bays are certainly an arm of the lake (p. 88-89). Below Big Island there is no well defined channel and no well defined current. The water on the Wisconsin side in most of St. Louis Bay is about as deep as on the Minnesota side. If I am not mistaken, I think the larger part of St. Louis Bay on Meade's map is shown to be a little deeper on the Wisconsin side, but there was not much difference, probably not over a foot (p. 91). There is no well defined channel except when you get above Big Island. If you say that there is a channel from that point down, it is merely a channel in the bay, made perhaps by a current in the bay directed by the trend of one of the shores" (p. 104-105). Alfred Merritt says, "I consider the waters up to above Big Island as a bay rather than a river on account of the width and on account of the general shallowness of the water, but principally as to the width, as distinguishing them from the river above. The river is confined within well defined banks and as you get beyond the mouth below Big Island, the waters spread out, become very wide and gradually keep spreading out as you follow down" (p. 118-119). Captain D. E. Stevens says the main navigated and navigable channel from the end of Grassy Point followed the red line on Minnesota Exhibit 3 through the letters A, B and D, through the cut-off. There were several channels to the south of this; at least two, although these were shallower and were less used, the larger one running along the lines marked

E and F. The curved line H was never used except in going to Milford (p. 211, 212, 213). Martin Wheeler says the line usually taken by boats, on Minnesota Exhibit 1 was AGBD, south of Big Island, but if they were going north of the island, they would go along the line AGBC (p. 950-951). Very little went up the channel marked H on Exihibit 1 (p. 953). Professor E. F. Bean, of the University of Wisconsin, a witness for Wisconsin, says that inside these bays there are definite channels such as are frequently found in a drowned river valley (p. 388); that between Grassy Point and Connors and Rice's Point the channel has been almost entirely lost, although there is a slightly deeper place at one point (p. 417); that between these points there are some holes where the soundings are deeper, but only what he would call an isolated group (p. 418). Henry S. Butler, a witness for Wisconsin, says that he has never known anyone to take into consideration in examining titles what he terms the "old channel"; that improvements have always stopped at the dock line along the edge of the water in Superior, and that he has never heard anybody claim ownership out to any channel (p. 476-477). J. H. Darling, called as a witness for Wisconsin, says there is substantially a uniform depth in the waters in Upper St. Louis Bay on a line from north to south, clear across from the Minnesota shore to the Wisconsin shore, except right close to the Minnesota shore, and this line would be approximately in the center of Upper St. Louis Bay (p. 621-622), and he thinks that even next to the Minnesota shore, at a point just north of the point marked C on Minnesota Exhibit 1, there is a depth of less than nine feet shown (p. 623), which would indicate a substantially uniform depth clear from the Minnesota shore to the Wisconsin shore running through this point.

From the foregoing it fairly appears that in these waters in question there is no well defined channel and no thalweg, although there can be figured out in some parts of Upper St. Louis Bay several more or less crooked lines which could be followed and get perhaps a foot or so deeper water than would be

obtained in certain other lines, run through these waters. The Meade chart, with the soundings thereon, proves this to be true and confirms the testimony of the witnesses, as above indicated, that there is no well defined channel or current through these waters, but that the soundings are what would be expected in the bottom of any lake, where pot holes might be found at any point, just as in the land surface or the surface of a prairie depressions can be found in a given area which is in general an even or flat surface. These waters were of so comparatively shallow a depth that if there had been any well known line of continuous deepest water, it is clear that navigation would have followed that line, but the evidence all through shows that any part of Lower St. Louis Bay could be navigated about as well as any other part, and that as to Upper St. Louis Bay there were four or five channels that were used, to a greater or less extent, extending practically all over the area of that bay.

F. *Such currents as there are in these bays are found mostly at either end of the bays and are due to the action of the water when forced up or down through the narrow openings between the pairs of points, just as is the case where there is a narrow water connection between two lakes. They are lake currents, flowing at times in opposite directions, rather than river currents flowing in one direction.*

Leonidas Merritt says that wherever there is a current from one cause or another, there will be scourings. Of course, the inflow from the lake may produce it just as much as the outflow. There may be a current in a bay or lake, especially such as is produced by a river flowing into a bay or lake (p. 106). Alfred Merritt says, "I do not say that a channel or a current in a bay indicates that the bay is a river, because unless a bay or lake is practically flat on the bottom there is apt to be a line of deep water through it somewhere" (p. 140). Captain Alexander McDougall says, as this great body of water of the lake outside these points rises and lowers and these two openings

(Superior entry and the Duluth ship canal) let this water into the enclosure of twenty or more square miles inside the points, the water there is affected in the same ratio that these openings will admit either inflow or outflow from this enclosure. "That extends up to about the beginning of the river at Big Island (p. 239-240). My idea is that the outflow tendency of the water as it comes from the river meets the incoming tendency of the water from the lake and neutralizes the current so that the sediment settles, and has formed these three pairs of point." (p. 243). Professor Sardeson says, "As a rule where there are two bodies of water with a connection between them and there is a flow from one into the other and vice versa, the stronger flow occurs from the larger into the smaller. This may be illustrated on the map showing the channel from the west end of Wisconsin Point running westward, which is longer than the one which comes the other way from Rice's Point (p. 937). The bottom of a lake has usually just the contour of the land, except that it is covered with water, and one finds holes and valleys, especially in glacial lakes, which we have here. Lake Superior is a glacial lake" (p. 937-938). Professor Lawrence Martin, Wisconsin's witness, says, referring to the preglacial type of lakes associated with raised beaches, which are found along the north shore of Lake Superior, that these lakes are exactly the same as the bays here in question, except that in the lakes that he spoke about the stream that entered into them is so small that it was not able to keep the channel through the bar and that the only difference, therefore, between such lakes and the bays here in question is that on the smaller lakes there was no inlet and outlet sufficient to keep the channel through, and that if there was no outlet through these bars, these bays would be a lake just the same as the lakes that he has spoken of in his monograph, and the only reason that he can suggest for now calling Superior and St. Louis Bays a river instead of a lake is because there is an inlet and an outlet (p. 370-371.)

II.

The physical characteristics of the shores of these waters are those of a lake and not of a river. There are no well defined banks, but the shores are full of large indentations and bays and are distinctly different from the well defined banks of the St. Louis River westerly of Big Island. The contour of the shore of the western end of Lake Superior for a hundred miles or more is that of a body of water gradually narrowing to a point. This countour brings this point approximately at Big Island and not twelve or fourteen miles to the easterly, where the width of the lake is still eight or nine miles.

John G. Howard says the shores have the characteristics of a bay rather than a river. There are many deep indentations on both shores, especially on the Wisconsin side, and these indentations give the waters the characteristics of a lake or bay wholly, rather than a river (p. 53). Leonidas Merritt says, a bay is a body of water nearly surrounded by land, while a river is a body of water that has a continuous current and narrows down to the proper width of a river and whatever the volume of water requires and has its trends or shores, like a river. Up near Fond du Lac and above, we find well defined banks on the St. Louis River without any substantial indentations, and below, from Big Island down, there are a large number of indentations of the shore, islands and bays of very considerable size. We find Pokegama Bay, Little Pokegama Bay, Howard's Pocket, Kimball's Bay, a considerable number of bays on the Wisconsin side and some small bays on the Minnesota side, the indentations on the north or Minnesota side not being so large (p. 94-95). I would like to say that this Upper Bay is not characteristic of a river whatever. You never saw a river like that on a map or anywhere else (p. 106). Alfred Merritt says I consider the waters up to above Big Island as a bay rather than a river, on account of the width and on account of the general shallowness of the water, but principally as to the width as distinguishing

them from the river above (p. 118-119). Benjamin Howard says it was always understood that St. Louis Bay was divided into two bays by Grassy Point and that they always considered that they got into the river when they traveled above Big Island. The shores of these waters were greatly indented, more like the shores of bays than of a river (p. 156-157). Professor Sardeson says from Big Island down there are no defined banks that he could point out that have been made or control the flow of the river from above. "I would say that a fair definition of the mouth of a river, put in layman's words, would be where the banks definitely and permanently widen out. That, in a loose way, would fit what I have given as the mouth of the river here" (p. 937).

The maps and charts introduced in evidence show that the St. Louis River is confined within fairly well defined banks down to Big Island; that from Big Island down there are several channels, the waters definitely and permanently widen out, and while the waters as they reach the western extreminty of Big Island are perhaps two or three hundred feet in width, yet from that point they gradually widen out until as they pass Big Island they are perhaps a mile or more in width and continue to widen out, except for the intersections of Grassy Point and Connor's and Rice's Points, until they get to Minnesota and Wisconsin Points, where they are eight or nine miles in width, and if it is to be considered that the mouth of the river is at Superior entry, as Wisconsin contends, it then would be at a point where the waters of a river naturally two to three hundred feet wide have widened out until they are about nine miles in width, except for the fact that Minesota Point which itself is only from two hundred to six or seven hundred feet in width, has been formed nearly across from one shore to the other. The general contour of the shore of the western end of Lake Superior, for some hundreds of miles, is that of a body of water gradualy narrowing to a point, and that contour brings the point at approximately Big Island at the west-

erly end of these waters, and not twelve or fourteen miles to the easterly, where the width of Lake Superior is, as above stated, eight or nine miles.

III.

These three pairs of points projecting from opposite shores were, according to scientific evidence and the evidence of tradition, formed in the lake. What was once a part of the lake must be still a part thereof, notwithstanding the formation of points projecting therein, even under the description of these waters as being a "drowned river," advanced by the professors of Wisconsin University. It follows that if there ever was a river at this point it was drowned and obliterated ages ago BY THE WATERS OF THE LAKE.

The testimony introduced proved that there were three pairs of points formed in the head of Lake Superior. The head of Lake Superior is approximately a triangle, with the St. Louis River entering at the apex. From Big Island, the place that Minnesota claims the river enters, passing down three or four miles, we come to Grassy Point, projecting mostly from the Minnesota shore, with a slight projection from the Wisconsin shore. There is some evidence that at one time there was an opening across this point on the Minnesota side, as well as on the Wisconsin side, thus making Grassy Point an island. As we proceed eastward for four or five miles, we come to the next pair of points, Rice's Point in Minnesota and Connor's Point in Wisconsin, and these points are naturally larger, as the triangle head of Lake Superior has widened out. Proceeding further eastward into the lake a couple of miles, we reach Minnesota Point and Wisconsin Point, a long narrow strip of land in the lake, from three hundred to seven or eight hundred feet in width, Minnesota

Point being eight or nine miles in length and Wisconsin Point considerably shorter. The evidence was that the material of these points was of the same formation, composed of sand and pebbles and with some clay intermixed and borings made therein indicated that they were of the same formation for a very considerable depth. The theory of most of the witnesses was that these points were formed by the action of the waves from Lake Superior backing up towards the western end of the lake and causing the deposit of a sediment as the force of the waves coming from the east met the force of the return flow from the western end of the lake, causing at the meeting place comparatively still water in which the sediment was deposited, it being the testimony we believe of all of the witnesses that undoubtedly the most westerly pair of points was first formed, the middle pair next and the most eastern pair last and there being testimony that still further out in the lake another point is gradually forming in the same manner. Minnesota maintains that the mere formation of these points in the lake could not and did not change the character of the waters from those of a lake to that of a river. Neither would the formation of an island in a lake or in a river change the character of the waters from what they were before, from being either a lake or a river. The evidence of the Professors of the University of Wisconsin was that these waters were what they termed a "drowned river." As we understand their theory, it was that because there was indication in the soundings of certain deeps or pockets in the bed of these waters, that this, in their nomenclature, indicated that there had been a prehistoric river at this point and that as there might have been a river there in prehistoric times, some twenty-five to fifty thousand years ago, that it should still be considered a river, even though the waters of Lake Superior, long prior to historic times, had submerged or drowned the ancient river. They advanced this proposition even though at the same time they stated that the waters of Lake Superior were at one time much deeper at the point in question than they are now, possibly 500 feet deep, and extended much further west than they now do or ever did since human history commenced. We think a fair interpretation

of their evidence is that if there ever was a river at the point in question it was drowned and obliterated *by the waters of the lake* and that as far back as history goes these waters have been and are the waters of the lake.

Leonidas Merritt, who had given a great deal of study to this subject, said: (p. 88) "My idea was that that bay was formed when this St. Louis (Bay) and Superior Bay was the open lake. I think anybody that has looked into geology and the formation of these points would agree that Grassy Point was first formed, because the lake gravel is there at the base and the sand out at the end, but it didn't raise above the water by the action of the sea and current as high as it did at Rice's Point and Connor's Point. Rice's Point is exactly the same formation. It has gravel at the base and sand out at the end, and Wisconsin Point is all sand from the drift of the south shore and these were formed from the drifts of the north shore. Minnesota Point is the same exactly, gravel resting out here (indicating), so that these points must have been formed one after another, and that is what we call St. Louis Bay in the old times." He goes on to say that when debris or soil comes down the river and the current is strong enough to carry it out in the lake, it will go only a little ways and will settle when it meets the waves from the lake; that he has observed the formation of these points and the washing of gravel upon them and that he has seen one form in Pike Lake, on the shores of which he has a summer home (p. 88-89). "I have given a great deal of study to the formation of these bars and my opinion is that the first bar in these waters was up in Spirit Lake and that then the bars of the lake were formed, one after another, down to what are now Minnesota and Wisconsin Points" (p. 94). Captain Alexander McDougall says that he has seen another point forming outside of Minnesota Point; that he has been on the hills in Duluth and seen the ice go away to the eastward for a number of days, when he would think navigation would open, and a big northeaster would send it back and it

would ground outside of Minnesota Point and be there perhaps until along in May and the erosion of the ice by the waves throwing the sand up onto the ice would be such that another point like Minnesota Point would form from the sand and deposits of the lake at about the palce where would be the edge of the ice field. He says that the Apostle Islands along the south shore are of a very soft sandstone formation and that the waves carrying the washings and deposits westerly gradually form these bars and there is evidence of their being formed by the washings from this sandstone formation and certain amounts of clay that are mixed in; that the formation of all of these strips of land like Minnesota Point, Rice's Point, Connor's Point and Grassy Point, were deposits in the body of the lake by the erosion from above and the washing of the sands by the action of the waves meeting (p. 238-239). He thinks Grassy Point was formed first, Rice's and Connor's Points next and Minnesota and Wisconsin Points last (p. 248). Professor Sardeson says that before the last glacial period there was probably a river emptying into the Lake Superior basin and that the glacier came through Lake Superior from the northeast and pushed to the southwest as far as Mille Lacs. After it retreated the lakes formed and the glacier did not destroy the old valley and that any buried channel in the bay is older than the last glacial invasion (p. 914-915). He says there is no reason for speaking of any part of the bay below Big Island as a "drowned river", although it is a drowned valley, just as a prairie valley may contain small lakes, so that it would be proper to liken the bed of these waters to a slough in a prairie. He locates the last glacial period from eight to twenty thousand years ago and says that after the glacier disappeared there was a tilting of the valley towards the northeast and a relative lowering of the land towards the southwest (p. 916-917); that at the present time, while the bay may send muddy water out into Lake Superior, yet that the St. Louis River is not dormant and does not control farther than what he calls the mouths of the river, or at Big Island, but that on the other hand, the streams of Lake Superior reverse the current and make what he calls

tidal actions clear up to Big Island (p. 917). He thinks that it is not at all proper from a geological standpoint to speak of a channel through the bay as a drowned river, unless there is proof that there was a river there that was drowned, and in his opinion there never was (p. 937). Professor Lawrence Martin, of the University of Wisconsin, a witness for Wisconsin, says that at one time Lake Superior had a higher level than at present and was probably 500 feet deep at Superior and Duluth and we find that the beaches rise towards the northeast and therefore conclude that the land has been tilting. The effect of that has been to back the waters of the lake into the mouths of all the streams on the Great Lakes. He considers that these waters constitute a "drowned river" (p. 348). He says that as to how Grassy Point, Connor's Point, Rice's Point, Minnesota and Wisconsin Points were formed, that Grassy Point is the hardest and most complicated one in the group to define. He thinks it may have been of somewhat different origin than the other four and that it may have been a spur *between two drowned valleys* and that the points were built by the waves of the lake and the alongshore current of the lake in a place where there was no previous land (p. 348). He thinks the river water had nothing to do with forming any of these points (p. 349). He says the difference between Wisconsin Exhibit 2 and Wisconsin Exhibit 3, which are charts of a geographical survey, is due to the submergence or drowning of a river by the tilting of the earth and the backing up of the water (p. 352-353). He thinks the deeper soundings in St. Louis Bay are parts of a drowned channel (p. 358). He says that bars are formed near the mouth of nearly all the rivers that empty into Lake Superior by the action of the waves of the lake and the alongshore currents (p. 359); that when Lake Superior, ages ago, was four or five hundred feet deep at Duluth and Superior, the St. Louis River would enter the lake way back probably ten miles westerly of Fond du Lac (p. 360) and he *supposes that it ceased flowing into the lake at that point some thirty or forty thousand years ago* (p. 361). He says that in order to have an estuary there must be a drowned river and he thinks there is some difference between an arm of the sea and an estuary (p.

364). He would consider that the river was drowned long before 1848 when Wisconsin was admitted to the Union (p. 365); that in his opinion Minnesota and Wisconsin Points, Rice's Point and Connor's Point were formed *in the lake* (p. 368). He classifies Lake Superior as a lake, although there are currents in it, and says that there is a current in Lake Superior for miles out from the Superior entry and yet there is no question but that this is a lake where the current is found and that this is the same current that is found in the bay, so that the mere matter of current is not a basis upon which one could classify as between a a river and a lake (p. 369). He says that on the south shore of Lake Superior undoubtedly river channels in ancient times extended a great deal farther out when the water of the lake was lower and although the waters of the lake have risen and there are defined channels, yet he does not consider that these rivers now go any farther than the shore of the lake, because no current maintains itself beyond the present shore. In his opinion it is true in some cases that where there was a big drowned river it should still be called a river, but where there is a small drowned river it should not be called a river (p. 383). He says that a drowned river is a drowned river regardless of size, but whether one can find evidence thousands of years after it was drowned depends on whether it happens to be a stream of a magnitude that maintains a current, or a little stream in which the evidence is obliterated (p. 384). He says that Lake Pepin would properly be called a river in a scientific sense if it has a channel and a current and shores (p. 385); that a bay would have no defined channels running through it, probably (p. 386). Professor Bean thinks that Wisconsin and Minnesota Points, Rice's and Connor's Points were formed by alongshore currents of the lake and that the action of the river had very little to do with them (p. 389). He says that Lake Pepin is a river, speaking geographically and geologically, although politically it is known as a lake and he thinks it would be known as a lake in any acts of Congress and judicial decisions, or anything of that sort (p. 411-412).

It fairly appears from the testimony of the witnesses both for Minnesota and Wisconsin that these pairs of points were formed *in the lake*, and if there existed or exists any ancient prehistoric antediluvian river channel, it was obliterated and drowned before the time of man upon the earth and drowned *by the waters of Lake Superior*. It fairly appears from the testimony of Professors Martin and Bean, of the University of Wisconsin, that even on their theory it would be in the most restricted and technical scientific sense that these waters could properly be spoken of as a river at all, drowned or otherwise, and that they would admit that politically speaking, at any time since the presnece of man upon the earth, these waters would be considered a part of the lake rather than a river. Even though it be admitted that in prehistoric times there was a river or a river valley at the point in question and that this was drowned *by the waters of the lake*, and if all agree, as they seem to, that the points or projections were formed *in the lake*, it is difficult to understand why these waters are not now a part or arm of the lake.

IV.

From a scientific as well as political standpoint, the mouth of the river is where the waters thereof cease to descend and reach the level of the waters of the lake and become a part thereof. This point is at the head of Big Island. The common understanding of the early settlers likewise placed the mouth of the river at this point.

Leonidas Merritt says the river commences at the west of the island, where the water divides and runs around the island. From there down it is the bay or part or arm of the lake and this was the common understandnig (p. 88-89). Alfred Merritt says the earliest plats, Minnesota Exhibits 14 and 15, show St. Louis

Bay running clear up to Big Island. We always considered the mouth of the St. Louis River where it divided and went into St. Louis Bay, just above Big Island (p. 116). Benjamin F. Howard says it was always understood in the early days that St. Louis Bay was divided into two bays by Grassy Point, and that St. Louis Bay was between Grassy Point and Big Island or Heugier's Island, and Lower St. Louis Bay was from Grassy Point to Rice's Point; that they always considered in the early days that they got into the St. Louis River when they traveled above Big Island and that the bays were not considered a part of the river (p. 156-157). Charles Krause says the waters from Rice's Point up to Big Island were always known in the early days as St. Louis Bay (p. 170-171) and that the mouth of the St. Louis River emptied into St. Louis Bay on the southerly side of Big Island (p. 175). Albert Swenson says that where the river divides at what is called the upper end of Big Island, where the current divided, was always considered the mouth of the St. Louis River in the early days (p. 179). C. W. McManus says that while he had an idea that the mouth of the St. Louis River was at about Grassy Point, yet he had heard the water above spoken of as the Upper Bay, where the water was wide from shore to shore (p. 231). Captain McDougall says the mouth of the St. Louis River was always understood in the early days to be around Spirit Lake, just above Big Island (p. 235) and that the waters just above and just below Grassy Point were commonly known as Upper and Lower St. Louis Bay (p. 237). Frank A. Brewer says that he always understood that the mouth of the St. Louis River would be where what is known as Upper St. Louis Bay started, just about where the waters divide above Big Island; that he has always known the waters between Rice's Point and the upper end of Big Island as Upper and Lower St. Louis Bay and that they were considered an arm or part of the lake, rather than a river (p. 260, 266). Luther Mendenhall says that the waters in question were commonly known as Upper and Lower St. Louis Bays in the early days (p. 270-272). John H. Norton, for many years County Attorney of St. Louis County, and who was a navigator sailing these waters before he became a lawyer, says that

the mouth of the St. Louis River was always understood to be at the head of Big Island (p. 274). Professor F. W. Sardeson says that he can see no reason for assuming that the mouth of the St. Louis River was ever further towards Lake Superior than it is now; that the St. Louis River builds a delta and as it approaches the edge of the delta it forms distributaries, about three of them, one of which he has heard called the "cut-off", and there are two others running around Big Island; that he should say there are two or three distinct mouths of the river around Big Island and that he thinks if the mouth of the river was ever at a different point, it was further up than it is now, and at one time it may have been at least a mile back from Big Island (p. 914-915). He says that the lake is dormant or of the same level up to Big Island and that is where he would locate the mouth of the river, and he should say that it had been located there for at least a hundred years, and that the waters up to that point are controlled and dominated by the waters of the lake (p. 917). He says that a river is a large body of water, comparatively narrow, and that a lake is a broad body of water, permitting differential or circular currents and essentially does not have a sloping surface. From Big Island down the water in the bay is not running constantly in one direction, but sometimes runs in and sometimes out; that in a river there is not sufficient width for circular currents within the channel and for that reason there is no compensation and the river necessarily has a sloping surface. In a broader piece of water, like a bay or lake, there may be a strong current, but there is room for a return current, which compensates (p. 922). He says that a fair definition of the mouth of a river, put in layman's words, would be where the banks definitely and permanently widen out, and that that, in a loose way, would fit what he has given as the mouth of the river here (p. 937). Professor Sardeson says that he entirely agrees with the statement in Professor Lawrence Martin's book with reference to Lake Pepin, where Professor Martin says: (p. 945)

"There has been difficulty in administering the fish and game laws, because until recently the open season differed in the two States. Accordingly there has been controversy, the State of Minnesota claiming the boundary should be in the middle of the lake halfway between the shores, while the State of Wisconsin contended it should follow the usual route traversed by steamboats. This route happens to be much nearer the Minnesota shore, because the large boats call only at Lake City on the Minnesota side. Accordingly Wisconsin claims nearly three-fourths of Lake Pepin, while Minnesota contends that we are entitled to only half. From the point of view of geography, there is certainly no main channel. Moreover the line of deepest water—if it were held that that constituted a main channel—does not coincide with the route usually followed by steamboats. Figure 52 shows that the line of deepest water * * * is on a broad, flat portion of the lake bottom, much of it occupying half or a third of the width of the lake. Where it is shallow it is even closer to the Minnesota shore than the steamboat route. The whole controversy really turns on the question as to whether the body of water at Lake Pepin is a river or lake. Geographers can have no hesitancy in calling it a lake, just as is the case in Lakes Ontario, Erie, or Huron, which are broad stretches of water in the St. Lawrence River system."

Martin Wheeler says that he always understood the mouth of the river was at Big Island, having sailed these waters for many years in the earliest days and having been a sailor all his life (p. 960). There was introduced by Minnesota a portion of what is known as Document 451 of the 25th Congress, Second Session, being the report of the British Commissioner to the British government and to the United States by its Commissioner, as to carrying into effect the 6th and 7th Articles of the Treaty of Ghent, made the 24th of December, 1814, the portion referred to being Section 98 found at page 74 of that Document and at page 989 of the record herein, reading as follows:

"Section 98. Under this view also, the undersigned had regard to the lake by which the St. Louis River discharged itself into Lake Superior. That river, after running through several lakes towards Lake Superior, when it reaches the last named lake, itself expands into a lake upwards of nine miles in length and from two-thirds of a mile to one mile and a third in breadth (as may more fully appear from the affidavit of Mr. Samuel Thompson, one of the Assistant Engineers of the Board to whom this survey was committed, placed in the appendix under letter E), after which it discharges into the Great Lake Superior, not by a bay, as does the Pidgeon River, but by a narrow mouth formed by two mere points of land, and so affording no continued river requiring the title of 'water connection' between it and Lake Superior, but connected intimately and immediately by a strait without length, so that in proceeding from Lake Superior to this lake which discharges into the St. Louis River, one goes at once from Lake Superior into a long lake, all of which will be perceived more satisfactorily from the maps of the Commission, a certified copy of the part of which will also be found in the appendix under the letter F."

Professor Martin, of the University of Wisconsin, is not very definite as to where he would place the mouth of the river, although he says that in his opinion, in a scientific sense, the bays, including the Bay of Superior, may be considered a part of the river (p. 345-347), and although he says that the water in Upper St. Louis Bay, while not due to the river at all, does not seem to him to exclude its being a drowned river, the level of the water there being controlled entirely by the level of the lake (p. 380). He says he would hardly agree with the testimony of Major David C. Huston, of the United States Corps of Engineers who had charge of the improvement of the Duluth Harbor from 1870 to 1873, where Major Huston testified:

"The Bay of Superior is a body of water the level of which is affected by the level of Lake Superior, so I do not

consider the mouth of the Bay of Superior as the proper mouth of the St. Louis River in a scientific sense. I would place the mouth of the St. Louis River proper several miles above Rice's Point, whereas the current, the upstream current caused by the lake, extends several miles above that point at times and the formation of the stream and its banks is evidently due to the action of the lake in that portion." (p. 380).

Professor Martin says that he thinks Major Huston's conclusion is wrong where he (Major Huston) testified, when asked to fix the mouth of the river, "In the neighborhood of twelve miles above Rice's Point. Not attempting to fix it definitely, *I would fix it at that point where the current ceases to be affected by the oscillations of the lake*" (p. 381). Professor Bean, of Wisconsin University, does not say much of anything about the mouth of the river as such, except inferentially, as does Professor Martin, in saying that he considers the bays as a part of the river. Hiram Hayes, a witness for Wisconsin, testified that in the early days he understood the mouth of the river to be between Wisconsin and Minnesota Points (p. 455). J. H. Darling, a witness for Wisconsin, says that in his judgment the mouth of the St. Louis River would be at Grassy Point and he would differ with Major Huston, his superior, as to its being at Big Island (p. 616). James Bardon, a witness for Wisconsin, who placed the boundary line on his map as being midway between the shores, produced a copy of the Superior Chronicle, published June 12th, 1855, containing an article entitled "Entrance to the St. Louis River", noting that buoys, had been set showing the channel (p. 773), and says that he does not remember any discussion about the State boundary until four or five years ago (p. 774). He says that he does not remember whether he suggested putting on his map the words "Mouth of the St. Louis River" at Superior Entry or not and does not remember that Mr. Relf ever received any instructions on the subject (p. 778). John A. Bardon says that the entry between Minnesota

and Wisconsin Points was sometimes spoken of in his boyhood days as the mouth of the St. Louis River and that he believes the reports at the light house were made out designating it the entrance or mouth of St. Louis River and among the boys at that time there was quite a discussion, he always assuming that the entrance to the St. Louis was between Connor's and Rice's Points, and there is where he thought it ought to be (p. 867). Wisconsin introduced Wisconsin Exhibits 20, 21, 22 and 23, offered in evidence at page 443 of the Record and found at pages 1059-1064, of the various charters of the City of Duluth, where, in the description of the boundaries of the said city, reference is made to the mouth of the St. Louis River at the natural entry of the Bay of Superior between Minnesota and Wisconsin Points. The description in all these papers seems to have originated with a description given in the old charter of the Village of Duluth and to have simply been followed in the amendments of the charter.

We submit that the designation of the mouth of the river as given by Major D. C. Huston, of the Corps of Engneers of the United States Army, who was in charge of harbor improvements from 1870 to 1873, where he fixed it "at that point where the current ceases to be affected by the oscillations of the lake", is a fair and honest definition. This, according to the undisputed evidence, would fix it where the Minnesota witnesses say that it was understood in the early days to be, where the scientific evidence indicates that it is and where by all just considerations it ought to be to work out equity and right between these two States and these two cities and the owners of property abutting upon these waters.

In *Johnson vs. State*, 74 Ala. 537, there was an indictment for suffering a game of cards to be played on a boat when on the Mobile River, under an act making it a criminal offense to play

cards on a steamboat on the river. One of the defenses was that the playing was done in Mobile Bay and not in Mobile River. The Court said:

> "There is a well recognized distinction between a river and a bay, the one being an inland stream and the other an inlet of the sea. Where the one begins and the other ends may often be a question of difficulty, yet the two are legally and in fact essentially distinct. * * * We cannot declare under such a rule of construction that the word 'river' was intended to include a bay."

In *Ball vs. Slack*, 2 Wharton 508, 30 Am. Decisions 278, it was held that the mouth of a stream emptying into a tidal river is where it flows into it, when the tide permits it to flow, and is the same at high water as at low water.

In *Alabama vs. Georgia*, 23 Howard 505, 64 U. S. 505, this court quotes with approval the definition of Woolrych, of a river as a body of flowing water with no specific dimensions—larger than a brook or rivulet, less than a sea—a running stream pent on each side by walls or banks, and Grotius Ch. 2-18 to the effect that a river is not to be considered barely as water, but as water confined in such and such banks and running in such and such channel. Hence there is water having a bank and a bed, over which the water flows, called its channel, meaning by the word 'channel' the place where the river flows, including the whole breadth of the river". In this case this court also says: "We say properly the 'shore' of a sea and 'bank' of a river, brook or small water". We think it certain that in common parlance the Minnesota shores and Wisconsin shores on the waters in question are seldom, if ever, spoken of as banks.

In *United States vs. Rogers*, 150 U. S. 249, this court held that the term "high seas" as used in the Revised Statutes is applicable to the open unenclosed waters of the Great Lakes between which the Detroit River is a connecting stream. This court says that "the Great Lakes are seas in fact, where they are navigable at all times and in all directions and border on different nations or states or people and find their outlet in the ocean, however they may be designated", and further says, *"Seas in fact do not cease to be such and become lakes because by local custom they may be so called"*.

In *People vs. Featherly*, 12 N. Y., Sup. 389, the syllabus is as follows:

"Sodus Bay, in Wayne County, is about five miles long and three miles wide. It is separated from Lake Ontario by a bar about a mile in length. At one end of the bar is an opening into the lake about 300 feet long, dredged to make a harbor for vessels. At times other openings are washed through the bar. Several streams empty into the bay but they are not sufficient to supply all its water. The water flows from the bay into the lake, or from the lake into the bay, according to the wind. Held, that Sodus Bay is a part of Lake Ontario within the Laws N. Y. 1879, c. 534 sec. 6 (game law) declaring that the provisions thereof shall not apply to the waters of Lake Ontario."

The court says in the opinion:

"In view of the location of the bay, which was nearly separated by a sand-bar from the waters of the lake, it is quite evident that the bay was originally part of the lake. All the evidence satisfactorily shows that the creeks feeding the bay were inadequate to supply anything like the amount of water it contained. The lake and bay emptied into each

other, the flow either way being determined by the course and strength of the wind."

In *Ainsworth vs. Munoskong Hunting & Fishing Club*, 159 Mich. 61, 123 N. W. 803, the syllabus is as follows:

"Munoskong Bay, about six miles long and five and three-fourths miles wide, is connected with Mud Lake at its upper end. The distance from the head of Mud Lake to Lake Huron, with which it connects at its lower end, is 24 miles. Munoskong Bay is navigable for boats drawing 10 feet of water. The waters of the bay and of Mud Lake are on practically the same level as Lake Huron and rise and fall with it. Held, that the bay is part of Lake Huron, subject, as far as concerns the boundaries of riparian lands, to the rules of law governing the Great Lakes and not of St. Mary's River, which flows into it."

The court quotes with approval from the opinion of the lower court as follows:

"Manifestly the river as such, in legal effect, does not reach either Detour or Point Iroquois. The widening waters at either end between these points are on the level of the Great Lakes. They connect with and rise and fall with them, have irregular shores and a broad expanse of several miles, contain in places many islands and are subject to storms and waves which render their navigation in small boats dangerous and, at times, impossible, and they present the general characteristic of the numerous inlets and bays connected with the Great Lakes."

In *Ne-Pee-Nauk Club vs. Wislon*, 96 Wis. 290, 71 N. W. 661, the Supreme Court of Wisconsin holds that a small stream which

spread into a body of water 25 to 65 rods wide and three miles long and then re-appeared as a stream, the surface being covered with water in the spring and fall and marshy and partially dry in the summer and being filled with rushes and wild rice, and navigable only by small skiffs, with no defined channel and no current during the greater part of the year, was not a water course, but a meandered lake. The court says in its opinion:

> "It is said that the controlling distinction between a stream and a lake or pond is that in the one case the water has a natural motion—a current—while in the other the water course is, in its natural state, substantially at rest, and this entirely irrespective of the size of the one or the other. But not every sheet of water in which there is a current from its head towards its outlet is therefore a stream. Angell Water Courses, 6th Ed. Sec. 4f. It is said that even the large lakes have such a current."

In *Jones vs. Lee*, 77 Mich. 35, 43 N. W. 855, the court draws a distinction between a river and a lake as follows:

> "A river is characterized by its confining channel banks, which give it a substantially single course throughout. A lake occupies a basin of greater or less depth and may or may not have a single prevailing direction."

In *Chamberlain vs. Hemingway*, 63 Conn. 1, 27 Atl. 239, the court quotes a considerable number of definitions of a river taken from various cases, some of which are as follows:

> "A river is a considerable stream of water that has a current of its own, flowing from a higher level, which constitutes its source, to its mouth, where it debouches." The Garden City, 26 Fed. Rep. 766.

Also:

> "It may sometimes be dry, but in order to be within the above definition it must appear that the water usually flows in a particular direction and has a regular channel, with bed, banks or sides."

Also another definition:

> "A large stream of water flowing in a channel on land towards the ocean, a lake or another river; a stream larger than a rivulet or a brook." Webster's Dictionary.

> "A large inland stream of water, flowing into the sea, a lake or another river; a stream larger than a brook." Worcester's Dictionary.

> "A stream flowing in a channel into another river, into the ocean or into a lake or sea." Stor. Dictionary.

> "A large stream of water flowing through a certain portion of the earth's surface and discharging itself into the sea, a lake, marsh or another river." Imp. Dictionary.

The State of Wisconsin, from its attitude and the indications in the hearings before the Commissioner probably will place some reliance upon the case of *Norton vs. Whiteside,* 239 U. S. 144, 60 Lawyers Edition 186, the decision of the Circuit Court of Appeals in which case is *Whiteside vs. Norton,* 205 Fed. page 5. Whatever else may be said of this case, it is clear that the Supreme Court of the United States has not passed upon the question of where the mouth of the St. Louis River is, and the only consideration that came before this court was whether the decree in that case presented such a Federal question that this court would take jurisdiction, and the decision of this court was

that it did not. That was a case entirely between private parties and involving the private title to a little island that had arisen in a part of these waters, opposite Big Island, and most of the questions that were discussed in that case were with reference to riparian rights, the possible shifting of the State line by harbor improvements, etc. There was no decision of any court in that case that properly should affect a decision as to the State boundary between the two great commonwealths of Minnesota and Wisconsin. The trial court did not undertake nor did he decide as to where the mouth of the St. Louis River might be. In giving his oral decision, the trial court said:

> "Mr. Washburn in his argument has expressed a desire that I make a finding on the question of fact as to whether or not the waters here involved, lying between the shore line of the plaintiff on the one side and of the defendants Whiteside and Alexander on the other, are waters of the bay or arm of Lake Superior, that is, waters of Lake Superior or waters of the St. Louis River. I do not think it necessary to do this, because in my view the result must be the same in either case, but I will say that it seems to me that the river certainly extends to a point below the waters here involved, and indeed, although these waters are designated on the map of the government surveys as St. Louis Bay, yet, in view of the language used in the enabling act as to the northerly and northwesterly boundary of the State of Wisconsin and in view of the map therein referred to (Nicollet's Map), a copy of which is here in evidence, I would feel obliged to find that the St. Louis River extends to what is commonly known as the Wisconsin entry between Minnesota Point and Wisconsin Point and that its mouth is there."

In rendering his formal decision, the trial court on this point said as follows:

> "It is considered by the court that the St. Louis River is substantially correctly described in the bill of complaint

down to the falls above Fond du Lac or the Indian Village, but it is not considered by the court necessary in this case to determine where the river ends and the lake begins, nor whether the waters on the locus in quo are more properly described as waters of the lake or of the river, for, in the view of the court, the result in the case must be the same whether these waters are river waters or waters of an arm of Lake Superior. Whatever the character of these waters, the boundary line between Wisconsin and Minnesota would, in the opinion of the court, and it is so found, follow the main navigable channel between Big Island and the Minnesota shore; that is, between the shore line of the plaintiff on the one side and the shore line of the defendants Whiteside and Alexander on the other."

The trial court found and adjudged that the island in question belonged to Norton and found that his title went to the center of the navigable channel as improved by the government.

It will therefore be seen that the trial court in that case expressly refused to find where the mouth of the river was, although expressing the view that on the evidence then submitted he thought he would find that it was at Superior Entry. When the case reached the Circuit Court of Appeals, that Court seems to have seized upon this loose expression in the oral decision of the trial court as to the location of the mouth of the river and to have treated that as equivalent to a judgment based on a question of fact, although the trial court in its decree had expressly refused to find on the question, and then the Circuit Court of Appeals, in adopting the Superior Entry as the mouth of the river, proceeded to build up a line of reasoning which resulted in a reversal of the lower court's decision. The decision of the Circuit Court of Appeals appears to have been based upon this offhand remark of the trial court, coupled with an inspection of a very small photographic copy of Nicollet's Map, which was in evidence in that case, and reference to the Enabling Act

admitting Wisconsin into the Union. As we have before suggested, the reference in the Enabling Act to Nicollet's Map was only to locate the northwestern corner of the State of Wisconsin by reference to the Indian Village, as such Indian Village was shown on Nicollet's Map. There is no justification for saying that Nicollet's Map was referred to in the Enabling Act for any other purpose than designating the location of the Indian Village. Nicollet's Map did not show either the main channel of the Montreal River, the middle of Lake Superior, the mouth of the St. Louis River or the main channel of said river, nor, in fact, as we understand it, did it even show the first rapids above the Indian Village. But it did show the location of an Indian Village on the St. Louis River. This map did not even show Big Island, and from the very general character of the map and the language used it is plain that the only intention in the Act of Congress was to fix a method of finding the northwestern boundary of the State of Wisconsin by designating it at the first rapids above the Indian Village shown on Nicollet's Map, and not with any idea of attempting to locate the mouth of the St. Louis River according to Nicollet's Map, for Nicollet's Map did not show or purport to show the mouth of that river, nor where it commenced or ended. But in any event, there was little evidence introduced in that case as to where the mouth of the St. Louis River might be and nothing like the amount of testimony that is presented to the Court in this case on that point, or as to the character of the waters here involved. We have before the Court here the evidence as to the location of the mouth of the river from a scientific standpoint, from the maps hereinafter referred to, showing that in laying down the State line these waters were considered as a part of the lake rather than as a part of the river, and the evidence of many witnesses that the mouth of the river was always considered, amongst the people, as being at Big Island Furthermore, it will be noted that even in the above mentioned case there was no judgment or final decision, or even a conclusive opinion, as to just where the mouth of the river was, except that Circuit Court considered, for the purposes of

that case, that it was in all probability somewhere below the little island involved in that suit.

That action was brought in the United States District Court of Minnesota. If then, as the Circuit Court of Appeals thought, the property involved was in Wisconsin, it is doubtful whether the court had any jurisdiction at all over the property, even if the decision concluded personally the private parties immediately involved.

V.

ACQUIESCENCE.

All the maps in common use, showing the State boundary, of which there are many, published from the earliest days down to the time this controversy arose, some published by authority of Wisconsin, some by authority of Minnesota, some by prominent citizens of Wisconsin and some by prominent citizens of Minnesota, all without exception show the State boundary running through the center of these waters, midway between the shores.

From the evidence introduced, it appears that many maps had been published prior to the time this controversy arose, both by the State of Wisconsin and the State of Minnesota and by prominent citizens at the Head of the Lakes, and in every instance where the State line was laid down on these maps at all it was invariably laid down as running midway between the shores through these waters. This line so shown is, throughout its course, very nearly coincident with the dredged permanent channel as finally improved by the United States government.

One of the very first maps showing the State line so laid down was published by James Bardon, a prominent citizen of Superior, Wisconsin, who located at the Head of the Lakes in the earliest times and has been perhaps the prominent citizen of Superior ever since. All of the atlases and plat books published in the two cities which delineated the State line, always delineated it midway between the two shores, and likewise the State maps published by Wisconsin and Minnesota so showed the State line. This shows the acquiescence of the people in this being the boundary line until the present controversy arose, and the real occasion of this controversy was the attempt of owners on the Wisconsin shore to reach out and claim valuable dock property on both sides of the navigable channel as improved by the government, thus attempting not only themselves to get to the navigable channel on their own side, but to reach over and claim the title to valuable dock property on the Minnesota side and shut off the Minnesota owners from access to any line of navigation. The map which was published by James Bardon was commonly known as the "Bardon Map".

Minnesota Exhibit 2 is a copy of this Bardon Map. The original was withdrawn from the record and Minnesota Exhibit 27, a photographic copy, was substituted therefor (see Record p. 294, original transcript p. 419). This particular copy was produced by the witness John G. Howard (p. 55) and was published in the early '70s, Mr. Bardon having published them from year to year with the dates of publication printed thereon according to the year of issue. The particular copy produced was one that had been in the possession of Mr. Howard's father, a pioneer of the early days, and Mr. Howard testified that this line was considered by everybody in the early days to be the boundary between the two States (p. 56).

Minnesota Exhibit 5 was a sectional map of Douglas County, Wisconsin, published in 1892 by Brooks & Smith, real estate agents of Superior, Wisconsin, and was produced by the witness John G. Howard, having been in his possession since the date of publication (p. 74-75). This Exhibit likewise shows the State boundary, in dotted lines, through the waters in question, midway between the two shores up to Big Island. Beyond and westerly of Big Island and up to Fond du Lac, it does not show the line midway between the banks, but apparently shows it as following the thread of the river and much nearer to one bank than the other in various places.

Minnesota Exhibit 6 is a map of Douglas County, Wisconsin, published in 1896, by P. A. Sandberg, of Superior, Wisconsin, and purports to show all main traveled highways, railroads, boundaries of towns and cities, location of railroads, steamships, postoffices, etc. This also shows the State line through these waters as substantially midway between the shores up to Big Island (or Clough Island as it is shown on that map), where we claim the mouth of the river is, but does not follow the boundary with the dotted lines further than that point. This map was also produced by John G. Howard (p. 75 of the Record), who stated that he had had it in his possession since publication.

Minnesota Exhibits 7 and 8 are photographic copies of what was known as the Bayfield Map, made by Lieut. H. W. Bayfield, of the English Navy, from a survey made from 1823 to 1825, Exhibit 7 being an inset from Exhibit 8, this copy being taken from a record in the United States Engineers' Office at Duluth, the legend on Exhibit 7 being put there by Mr. Darling of the United States Engineers on April 22nd, 1904. This map shows the line of soundings, starting out from Superior Entry and going between Rice's Point and Connor's Point and through Lower and Upper St. Louis Bays, and this line of soundings, made from

1823 to 1825, is substantially on the State line. This map was introduced at page 81 of the Record and it was stipulated at page 987 of the Record that the legend upon Exhibit 8, in the lefthand corner, under the words "St. Louis River", which is illegible on the Exhibit, is as follows: "Over the bar of the St. Louis there were 8 feet water and 6 feet could be carried up to the post of the American Fur Company". Exhibit 8 is, of course, on a very small scale, but Exhibit 7, being an inset, showing the head of Lake Superior, gives a very good general picture of the waters at the head of Lake Superior, except that Big Island is delineated thereon as having somewhat more of a point than it has ever had within the memory of living men. The track survey, being Exhibit 4, indicates the soundings taken up through these bays and for some distance up the river, showing that the line which he traveled in making that survey was substantially midway between the opposite shores, except that through Lower St. Louis Bay it cut somewhat nearer the Wisconsin shore than the Minnesota shore. This map is several times spoken of in the evidence in this case as having been regarded by all as a very wonderful piece of work, to have been accomplished with the means and in the time that the work was done. It was the only chart in use by those navigating these waters until about the year 1866, when the Meade Map was published (see Record p. 121).

Minnesota Exhibit 9 was a map produced by Leonidas Merritt (p. 86-87) and was known as "Merritt & Company's New Sectional Map" and was published by the witness Merritt in the year 1888 and was compiled and drawn from the United States Land & Coast Surveys by W. W. Howard and R. H. L. Jewett, surveyors and draftsmen. This map showed the State boundary through these waters, in a heavy red line, substantially midway between the shores until the western end of Big Island was reached, and from there westward the boundary appears to fol-

low the thread of the stream. It was in common use in the days when it was published. Mr. Merritt testified that this map showed the State boundary according to the common understanding of the people ever since he was born and he knew everybody at the Head of the Lakes and this boundary was generally recognized and was of common repute. He says that the series of maps which he and his firm published were for years about the only maps used in the vicinity (p. 87). He says that great care was taken in getting up these maps, because he had found in cruising that often there were offsets in the surveys and that the plats did not correctly show the surveys according to the field notes, and so he had the field notes worked up and published one of the first correct maps of the vicinity (p. 86-87).

Minnesota Exhibit 10 was withdrawn and Exhibit 23, a copy, substituted for it. This was introduced at pages 92 and 93 of the Record and the substitution was agreed upon at page 270. This was a map published by Lewis & McNair and copyrighted by Ray T. Lewis, a former Mayor of Duluth, in 1888. It shows the State line at the point where all these other maps show it and was in common circulation at the Head of the Lakes in the days when it was published. This map delineates the State line midway between the shores of these waters up to the western end of Clough or Big Island, where we claim the mouth of the river is. From there on the line is not traced on the map.

Exhibit 11 was a plate from Rowe's Atlas, being page 126 of that atlas, which atlas was published in the City of Duluth about the year 1890 and which has been in common use as the atlas of the City of Duluth ever since (p. 92-93 of Record). This shows the State line marked midway between the shores up to the head of Big Island and from there on shows it running much

nearer one shore than the other at various points in the river, westward to the western boundary of Wisconsin, indicating that from the western end of Big Island the State line did not run midway between the banks but followed the thread of the stream.

Exhibit 12 (p. 94-95) is another map published by Mr. Merritt in the year 1889, from land and coast surveys, and the map was gotten up by R. H. L. Jewett. This likewise shows, in heavy red line, the State boundary and shows Upper and Lower St. Louis Bay clearly marked thereon, and was in common circulation at the time it was published. This map, it will also be noted, shows the State line midway between the shores up to the head of Big Island and from there on shows it following much closer to one shore than the other at various points. As this map was carefully prepared and shows, very distinctly, the State line, at the same location as all the others, and shows it also as it extends westerly from Big Island through the River at Fond du Lac, and shows the west line of Wisconsin, we attach a copy to this brief. This copy is the same as Exhibit 12.

Minnesota Exhibit 13 is a map of the head of Lake Superior published by James Bardon, of Superior, Wisconsin, in 1876, and was in common circulation at the time. It was one of the series of the so-called Bardon Maps. It has the date of publication plainly marked thereon and shows much more clearly than Exhibit 27, which was substituted for Exhibit 2, said Exhibits 27 and 2 being earlier publications. It will be noted that this Bardon Map shows the State line midway between the shores up to the head of Big Island, and from there on shows the State line hugging much nearer to one shore or to the other in many places as it goes up the river, indicating that from that point it followed the thread of the river.

Mr. Merritt testified about these maps that there was no controversy about the State line in the early days. *"My recollection is that at the time of the making of these maps we considered the bays as a portion of the lake and so that the line divided the waters centrally until we came to the river at Big Island. We had a clear idea, I think, that these bays were a portion of the lake and that we made the division there according to that."* (p. 100). These parties, in making these maps, were clearly following the boundaries as laid down in the acts admitting these States to the Union, considering the actual mouth of the river as being at Big Island. It is true that some of the Bardon Maps have the words "Mouth of the River" printed at what is known as the Superior Entry, but Mr. Bardon testified that he did not know who caused those words to be placed there or how they got there (p. 778). Mr. Merritt says with reference to this (p. 100) that you might as well say that the mouth of the St. Lawrence River is the mouth of the St. Louis River, because the whole chain of lakes and the Detroit River and the Sault Sts. Marie, the Niagara River, etc., are really but a part of the St. Lawrence River System, and he says that according to scientific geography if you gave the length of the St. Louis River you would go clear from the Seven Beaver Lakes, the head of it, to the mouth of the St. Lawrence. This statement of Mr. Merritt's about the St. Lawrence River system is borne out by the extract from Professor Lawrence Martin's book, found at page 945 of the Record of this case and quoted in the foregoing part of this brief in Subdivision IV.

Exhibit 14 is a township plat of Township 49, Range 15, in Minnesota, just northerly of the waters in question, and Minnesota Exhibit 15 is a plat of Township 49, Range 14, covering the territory from Grassy Point easterly. They were produced by Alfred Merritt from a plat book containing plats of nearly all the townships clear up to the Canadian border, which he had

carried for 38 or possibly 40 years, and the plats were in common use through the Head of the Lakes region. These plats show the St. Louis Bay running clear up to the head of Big Island. Exhibit 14 shows the State line clearly marked thereon, up to the westerly end of Big Island (p. 116).

Mr. Merritt says that Exhibit 12 was in common use at the Head of Lake Superior (p. 117).

Exhibit 16 was a map showing the lands of the St. Paul & Duluth Railroad Company, which was the first railroad at the head of Lake Superior and at the time it was built called the Lake Superior & Mississippi Railroad, and was given to the witness B. F. Howard by his father some years before his death, which occurred in 1881. This shows the State line clear up to the western end of Big Island, midway between the shores, where all of the other maps, without exception, show it (p. 160).

Exhibit 17 has no particular bearing, except as perhaps indicating Superior's bird's-eye view of Superior and at the same time belittling Duluth, but it does give a very good view of the waters in question, although it is the view of one looking through the large end of a telescope at Duluth, which latter city is three or four times the size of Superior. The State line claimed by Wisconsin would practically hug the Minnesota shore, northerly of the points marked AEB & C thereon, illustrating how inequitable it would be to turn over all these waters to the State of Wisconsin and the Wisconsin shore owners. The point A thereon represents the lower end of Grassy Point; B, Big Island; C, Spirit Lake; D, where the witness McDougall says the mouth of the river is and was always known; E, the waters of Upper St. Louis Bay; F, Lower St. Louis Bay and G, Superior Bay (p. 237).

Exhibit 18 consists of two sections, the lower half being of a map of St. Louis County, in which Duluth is situated, published about the year 1892 and the county map in common use from that time to the present. The upper part of the map is of the northern part of St. Louis County, Minnesota, up near the Canadian border, which was not published until about 1902. This lower half shows the State line at the point contended for by Minnesota. It was in general use and circulation from the time it was published. The map was produced by the witness F. A. Brewer (p. 262).

Exhibits 19. 20 and 21 are government plats of these townships both on the Superior and Minnesota side, covering the lands adjoining these waters and showing that on the government plats on both sides the waters were marked "Bay of St. Louis" clear up to the westerly end of Big Island (p. 263).

Minnesota Exhibit 22 is a Railroad Commissioners' map of Minnesota published by the Railroad Commissioners of the State of Minnesota, corrected to April 1st, 1913, being a re-issue of previous publications and showing that these waters were marked "Bay of St. Louis" clear up to the westerly of Big Island (p. 264).

Exhibit 24 is another good copy of the Bardon Map, published in 1875.

Exhibit 25 is a map published by the Lake Superior News of Duluth, Minnesota, in the year 1882. It is a sectional map showing the Cities of Duluth and Superior and their vicinities. This shows the State line delineated as do all the other maps, running to the head of Big Island (p. 272). Mr. Mendenhall

testifies this was the line recognized by all parties as the State line in the early days.

Exhibit 26 is a map of Douglas County, Wisconsin, compiled, drawn and published by Charles Lagro, County Clerk, in the year 1889. It was in common use in Douglas County for years after it was published. This clearly shows the State line laid down midway between the shores, clear to the head of Big Island (p. 277, 289, 332). It was shown that this map was, by order of the County Board, furnished to each of the county officers and each school room in the county, at the expense of Douglas County, Wisconsin, and that these copies were paid for by the county (p. 232-233).

Exhibit 28 is a map of Douglas County, Wisconsin, showing the iron ranges therein, published by the Citizens' Copper Committee of West Superior, dated 1901, and lays down the State line as do all the other maps, clear up to the head of Big Island (p. 420).

Exhibit 29 is a map issued by the state authorities of Minnesota in 1910 and 1911, or compiled in that year, showing the State line running midway between the shores (p. 295).

Exhibit 30 is a plat from Frank's Atlas of Duluth and vicinity, this atlas having been published in the City of Duluth about the year 1902, and together with Rowe's Atlas, being in common circulation and general use in the City of Duluth, these two atlases being the only ones that we know of in circulation in Duluth (p. 300.) This shows the midway State line.

Exhibit 31 is a map used for years by the Land & River Company of Superior, the original townsite company of that city and which has large real estate holdings, and came from the files of that company, showing the general location of the lands and waters at the Head of the Lakes. It is a large wall map, used in their offices for years and showing the broad expanse of these waters with the State line clearly delineated, running midway between the shores. It was entered according to the Act of Congress about the year 1890 and in use in the business of the original townsite company of Superior. The map was produced by James M. Kennedy, the Assistant General Manager of the Company (p. 301-302).

Exhibits 32 to 46 inclusive were introduced from pages 305 to 330, showing payment of taxes by the Carnegie Dock & Fuel Company and the Zenith Furnace Company, since 1913, both in the State of Wisconsin and the State of Minnesota, upon identical property, their property being located on the Minnesota side just westerly of Grassy Point and being some of the property that Wisconsin had reached across the bay in an attempt to tax. The location of this property, just westerly of Grassy Point, can be seen upon Minnesota Exhibit 3, being the docks numbered 1, Number 2, and Number 3 thereon.

Exhibit 47 is a map published about the year 1838 in Philadelphia by Hinman & Dutton, well known map publishers, showing Wisconsin Territory. It came from the records of the Minnesota Historical Society, in whose records it had been since prior to the year 1870. This shows a broad expanse of water at the end of the lake (p. 335).

Exhibit 48 is a sectional map of the surveyed portion of Minnesota and the Northwestern part of Wisconsin, taken from

Sewell's map of Minnesota, sold wholesale and retail in St. Paul by George Little, bearing date 1864. This shows the waters in question marked as St. Louis Bay (p. 338). The map came from the records of the Minnesota Historical Society (p. 338).

Exhibit 49 is one of the records of the Minnesota Historical Society, published about the year 1850. It has been in the possession of the Minnesota Historical Society since about 1855. It was published by Thomas Copperthwaite & Company, Philadelphia. It is a map of the organized Counties of Minnesota, contained in a small volume in the possession of the State Historical Society. The map part was finally withdrawn, as the purpose of its introduction was a statement made in a pamphlet in connection therewith, as follows:

> "The St. Louis River, which empties into the western extremity of Lake Superior, or Fond du Lac, as it is called, is navigable near its mouth, but like all the streams which flow into Lake Superior, it is full of falls and rapids. Near the mouth there is a settlement of half-breeds, a Chippewa Indian Village and Indian trading house."

The publication consisted of 16 pages, 3x5 inches in size. (p. 339-340).

Exhibit 50 was taken from the files of the Minnesota Historical Society and is an official publication of the State of Wisconsin, the exhibit being taken from a portfolio entitled "Atlas Accompanying Volume 3, Geological Survey of Wisconsin, T. C. Chamberlain, Chief Geologist, 1877". This map shows the State boundary line through the center of the bays in question and up

to the westerly end of Big Island. There was read into the record an extract from page 5 of the publication from which this map was taken, as follows:

> "Large quantities of whitefish and trout are already taken at the mouth of the St. Louis River and its vicinity, and as the population increases in amount along the shores of the lake, the fisheries will be largely extended." (p. 342-343).

Exhibit 53 is a map of a portion of Douglas and La Pointe Counties, Wisconsin, and St. Louis and Lake Counties, Minnesota, published by Mitchell, Rice & Relf, in Superior, Wisconsin, in the year 1857. This gives a very clear picture of these waters, and the words "St. Louis Bay" are marked on the waters in question. It was identified by Mr. Bardon at page 777 of the record and offered at page 781.

Exhibit 54 is a portion of the original Meade map, showing the line of soundings and the bar just above the point marked C on Minnesota Exhibit 1, indicating a channel substantially in a direct line from the end of Grassy Point westerly instead of going around the channel claimed by Wisconsin on the line marked H on Minnesota Exhibit 1.

Minnesota Exhibit 57 is a soil map of the northern part of Wisconsin, including Douglas County, made by Carl Thompson, Theodore Dunnewald and Otto Bergh, as a part of the Wisconsin Geological and Historical Survey issued in 1914 by authority of the State of Wisconsin, and this map also shows the State line marked through the waters in question, midway between the shores (p. 986-987).

Minnesota Exhibit 58 is a geological map of the west end of Lake Superior by F. I. Thwaites, of the Wisconsin Geological Survey, issued in 1911 by the authority of the State of Wisconsin. This map likewise shows the State line plainly marked, running midway between the shores in question (p. 987).

Minnesota Exhibit 59 is entitled, "A True Map of the Survey Made under the 7th Article of the Treaty of Ghent by Order of the Commissioners and signed by Peter B. Porter and Anthony Barclay, Commissioners, under the 6th and 7th Articles of said Treaty, David Thompson, Surveyor," and was filed as of October 23rd, 1826, by order of the Board dated October 22nd, 1827, and was taken from the history and digest of the International Arbitration, to which the United States was a party, by John B. Moore, Volume VI, Map 36, 53rd Congress, 2nd Session, House Miscellaneous Documents No. 212, Serial Number 3267 (p. 988). This map shows the waters in question as a broad expanse, clear up to the head of Big Island.

A few of the maps referred to have the words "Mouth of St. Louis River" printed near the Superior Entry, which seems to have come from the fact that the Bardon Map had these words placed there, by what means he does not know, but most of them have the words "Superior Entry" marked at this place or have no words at all at that point.

The foregoing were the maps introduced by Minnesota, showing the universal recognition of the State line by both States and the citizens in each State. At page 909 of the Record, Attorney General Owen, of Wisconsin, stated that he had examined the maps and public documents in the State Historical Society at Madison, for the purpose of ascertaining whether

there were maps of this region, including the waters of the Bay of Superior, St. Louis Bay and the St. Louis River, *that had no State boundary line* marked thereon and that he found certain maps which had no State boundary line indicated, and he was allowed to give a list of them, which is Wisconsin Exhibit 56 of the Record, found on page 1073. In this connection he, however, stated frankly that he did find a number of maps on file in the State Historical Society of Madison that had the boundary line marked substantially as indicated on the map called the Bardon Map that was introduced in evidence by the State of Minnesota as Exhibit 13 (also Exhibits 27 and 24), and that the number of maps there found with the boundary line marked was not to exceed four or five and that he made no list of those maps and that *he found no map that had any different line than as shown on the Bardon map.* This statement of the Attorney General of Wisconsin is sufficient, without further examination, to show that no maps which were introduced by Wisconsin indicated the State boundary at any other point than as claimed by Minnesota.

We note in going through the Wisconsin Exhibits that Wisconsin Exhibit 31-J appears to be a photostatic copy of one of a series of harbor maps gotten out, on which someone appears to have drawn a State line, twisting around the government channel, about at the location where Wisconsin appears to claim the State line, but this line was apparently not a part of the regular harbor map but was drawn by someone for the purposes of illustration. One of the series of regular harbor maps is Wisconsin Exhibit 31-K. Wisconsin Exhibit 31-J would appear to have been a part of a bunch of copies of maps presented by Wisconsin with a certificate from the War Department dated August 4th, 1917, certified as a part of Senate Document Number 237 of the 26th Congress, Second Session. This certification in reference to the 26th Congress must have been a mistake, because Exhibit 31-K, which appears to be a part of the bunch so certified, was dated as late as 1915, and therefore this Exhibit 31-J was not

in any sense a map in common use generally or in the War Department, and it seems rather uncertain whether this bunch was introduced at all, although they were marked for identification as Exhibits 31-A to 31-L inclusive at page 506 of the Record.

Wisconsin Exhibit 52, which was a proposed publication of the United States Geological Survey not yet issued in 1917, showed the State line along the line where Wisconsin would like to put it, but it clearly appears that this map was only tentative and not yet published and to have been based only upon the claims of Wisconsin since this controversy arose, especially as it appears from the plat that the surveys upon which it was based were not made until 1914 and 1915 (p. 798).

VI.

The common understanding of the citizens, from the admission of the two States until this controversy arose, a period of about sixty years, was that the boundary line lay through the center of these waters, midway between the shores. During this time the authorities of the two States, and the two cities in these States, acquiesced in this boundary, until in 1913 Wisconsin attempted to reach over the line into Minnesota for taxation purposes. The United States Government, in the establishment of dock lines and harbor improvements, recognized the midway line as the natural dividing line, and in this the States and the people thereof acquiesced.

John G. Howard says the State line shown on the Bardon Map was considered by everyone in the early days to be the boundary line between the two States (p. 56). Leonidas Merritt says that the State line shown in red on Minnesota Exhibit 9

(the same line shown on the Bardon Map) was the common understanding of the people at the head of the lakes as to its location ever since he was born. He knew all the people at the head of the lakes in those days and it was so known by common understanding and repute (p. 87). He published a series of maps, carefully prepared. He says there was no controversy about the State line until the case of *Norton vs. Whiteside* a few years ago. He says about the preparation of the series of maps published by him in the 80s, *"My recollection is that we considered the bays as a portion of the lake and so made the line dividing the waters centrally until we came to the river at Big Island. We had a clear idea, I think, that these bays were a portion of the lake and that we made the division there according to that."* (p. 100). This is just about the line of soundings appearing on the famous old Bayfield map made in 1823 (p. 93) (Minn. Exhibit 7). Alfred Merritt says the Bardon Map was the well known map in the 70's and was considered to be accurate; that the State line thereon shown was considered and generally known amongst the sailors and early settlers at that time as the boundary (p. 114-115). This State line shown on Minnesota Exhibit 12 (one of the Merritt maps) was the same as on the Bardon map and always known as the State line (p. 116-117). Frank A. Brewer (p. 259 and following) produced a number of ancient maps (Minnesota Exhibits 18, 19, 22, etc.) showing the State line, which he says was generally accepted by the people (p. 261-263). Luther Mendenhall, one of the earliest lawyers at the head of the lakes and still a prominent citizen, produced a number of maps showing the State line as generally recognized, without question, in the early days, and where he says everybody understood it to be (p. 272). William Tiedeman testified that he had been City Assessor of Superior, Wisconsin, since 1905, and before that was a member of the Board of Aldermen; that during all the years he had been assessor no property outside of the dock line on the Superior side had ever been assessed by the Wisconsin authorities up until the year 1913, when Wisconsin attempted to assess across and take in property on the Minnesota side of the dredged channel. Wisconsin admitted this in

its answer (Record p. 16). That this was attempted only because of the decision in *Norton vs. Whiteside*, 205 Fed. 5, made by the Circuit Court of Appeals in that year (p. 278-287); that then in making the assessment he assessed the ends of the Carnegie Fuel and Zenith Furnace Company docks on the Minnesota side and the owners immediately protested the assessment (p. 287). At other points further east Wisconsin never assessed or attempted to assess beyond the dock lines on the Wisconsin side, the assessment usually being made according to the acreage basis (p. 285). The first assessment ever attempted by Wisconsin beyond the Wisconsin dock line was in 1913, when Wisconsin attempted to assess clear over to the line marked H on Minnesota Exhibit 3, practically up to the Minnesota shore, and never before had Wisconsin attempted to assess more than halfway across these bodies of water (p. 286). They only attempted to go further because of the *Norton vs. Whiteside* case (p. 287). Mr. Scott, the City Assessor of Duluth, testified (p. 295) as to the value of certain of these porperties on the Duluth side with dock fronts on these waters (Minnesota Exhibit 3), the most important only, but aggregating, as listed, between $13,000,000 and $14,000,000, many of which had been improved for from fifteen to twenty-five years (p. 296 to 297). From pages 305 to 330 Minnesota Exhibits 32 to 46 were introduced, showing that since 1913 owners on the Minnesota side had paid taxes on the Minnesota dock properties in Minnesota and, under protest, on the same properties in Wisconsin.

From page 326 to 334 W. J. Leader, County Clerk of Douglas County, Wisconsin, and in that office since 1891, testified that his predecessor, Mr. Lagro, County Clerk in 1889, published a map showing the State line midway between these shores, which was in common use in the Douglas County, Wisconsin, offices for years and purchased by the County Commissioners for use in those offices (Minnesota Exhibit 26). It was commonly known as Lagro's map.

Henry S. Butler, a lawyer and witness for Wisconsin (p. 476-477), admitted he had never heard of any claim of ownership by Wisconsin beyond the Wisconsin dock line, until this controversy arose, and that there had been no taxation by Wisconsin prior thereto, beyond the dock line. James Bardon, of Superior (p. 763), publisher in the 70's of Bardon's map, where he laid down the State line as midway between the shores, says that he never heard any discussion about the State line until four or five years ago (p. 774). In getting out his own map, he and Mr. Relf, who drew it, consulted many people. Mr. Relf was Deputy Clerk of Court and they took a great deal of pains in preparing it. Relf published the earliest map Bardon remembers in 1857 (p. 786-787).

E. F. Bean (p. 411), Professor of Wisconsin University and a witness for Wisconsin, says that while geologically speaking, or in its history, such a body of water as Lake Pepin would be considered a river, yet speaking politically it would be considered a lake. He says (p. 411): "Q. Well, politically speaking, then, it is not known as a river, is it? A. It is known as a lake. Q. And it would be known as a lake, ordinarily, in any acts of Congress or anything of that sort? A. Yes. Q. What? A. I should think so, yes. Q. And it would be considered a lake and known as a lake in judicial decisions, you would think too, wouldn't it? A. Yes." He admits that his idea of these waters in question is substantially, if not quite the same, that however they might be considered from an historical or geological standpoint, yet politically they would be considered a lake.

While the United States government, in the improvement of navigation, undoubtedly is not limited by State lines, yet it unquestionably intends to improve and does improve with some regard to the convenience and rights of shore owners in adjoining states. All of its permanent improvements of navigation have been towards a navigable channel substantially midway

between the shores, thus recognizing what would seem the natural right from the physical characteristics of the waters in relation to the adjoining states and the shores thereof.

The record is wholly lacking in any evidence on the part of Wisconsin to the effect that anyone ever in behalf of Wisconsin, in the early days, or until this controversy arose seven or eight years ago, made any claim that the boundary line between these States was otherwise than midway between these shores.

It stands undisputed that until this controversy arose seven or eight years ago, there were the following acts of acquiescence in the midway line between the shores being the boundary line:

1. That taxation by each State had been limited to not beyond the midway line from its respective shore;

2. That improvements had not been made or attempted by the shore owners beyond the midway line from their respective shores;

3. That the maps published by authority of both States had, without exception, where the State line was delineated at all, shown it midway between the shores;

4. That numerous private maps, published by the citizens of each State, and notably the Bardon map, published from year to year in the 70's, had shown the line midway

between the shores, and that no private maps ever published showed it at a different place;

5. That all the early settlers understood and it was common repute that the midway line was the State line, and this general understanding existed and was unquestioned until seven or eight years ago. No witness for Wisconsin even hints that such was not the common and universal understanding—not even James Bardon, who said he never heard any question until a few years ago. Whatever acts there were, be they more or less, were of acquiescence and no dissenting voice is found for sixty years, until this controversy arose.

It has been decided by this court that as between the States of the Union, long acquiescence in the assertion of a particular boundary and the exercise of dominion and soverignty over the territory within it should be accepted as conclusive as to such boundary, and due weight will be given to maps in common use or published by the authority of the respective States, and other evidence of such acquiescence.

In *Louisiana vs. Mississippi*, 202 U. S. p. 1, 50 L. Ed. 913, this court says, with reference to these matters:

"Moreover it appears from the record that the various departments of the United States government have recognized Louisiana's ownership of the disputed area, that Louisiana has always asserted it and that Mississippi has repeatedly recognized it and not until recently has disputed it.

"The question is one of boundary, and this court has many times held that as between the States of the Union

long acquiescence in the assertion of a particular boundary and the exercise of dominion and sovereignty over the territory within it should be accepted as conclusive, whatever the international rule may be in respect of the acquisition by prescription of large tracts of country claimed by both."

The court further says, near the close of the opinion:

"The official maps of Mississippi recognized Louisiana's ownership of the disputed territory. The State map of October 26, 1866, which was approved by Governor Humphrey and also by Governor Alcorn, did this, and other maps, as the official map of Mississippi published under an act of the legislature of the State on March 8th, 1882; Rand & McNally's sectional map of Mississippi, compiled from the records of the office of the Surveyor General of the Board of Immigration and Agriculture, Jackson, Mississippi, and the railroad commissioners' map of Mississippi gave like recognition. The only exception seems to be a map of the railroad commission issued in 1904, two years after this suit was instituted, wherein, on the 18-mile theory, Mississippi for the first time cartographically extended her claims into the St. Bernard-Louisiana Peninsula.

"The record contains much evidence of the exercise by Louisiana of jurisdiction over the territory in dispute and of the general recognition of it by Mississippi as belonging to Louisiana. Apparently Louisiana had exercised complete dominion over it from 1812, with the acquiescence of Mississippi, unless the fact that the latter made a general reference to islands within six leagues of her shore, in her code of 1880, indicated otherwise. But the evidence fails to satisfy us that she attempted any physical possession or control until after 1900. The few instances referred to as showing that Mississippi asserted rights in the disputed area are of little weight and require no discussion."

The above case involved water boundaries.

State of Virginia vs. State of Tennessee, 148 U. S. 503, 37 L. Ed. 537. The court says (p. 522):

> "Independently of any effect due to the complaint as such, a boundary line between states and provinces, as between private persons, which has been laid out, located and marked upon the earth and afterwards recognized and acquiesced in by the parties for a long period of time is conclusive, even if it be asserted that it varies somewhat from the course given in the original grant, and the line so established *takes effect not as an alienation of territory but as a definition of a true and ancient boundary.*"

The court in this case quotes with approval Vattel on the Law of Nations, as follows:

> "The tranquility of a people, the safety of states, the happiness of the human race, do not allow that the possessions, empire and other rights of nations should remain uncertain, subject to dispute and ever ready to occasion bloody wars between nations. Therefore, it becomes necessary to admit prescription, founded on length of time, as a valid and incontestable title."

Wheaton's International Law is quoted in the same effect.

In *State of Indiana vs. State of Kentucky*, 136 U. S. 479, 34 L. Ed. 329, the court says:

> "The long acquiescence of Indiana in the claim of Kentucky, the rights of property of private parties, which have grown up under grants from the State, *and the general understanding of the people of both States in the neighborhood forbid*, at this date, after a lapse of nearly a hundred years since the admission of Kentucky into the Union, any disturbance of the State in her possession of the island and jurisdiction over it."

The court further says in this case:

> "It is a principle of public law, universally recognized, that long acquiescence in the possession of territory and in the exercise of dominion and sovereignty over it, is conclusive of the nation's title and rightful authority."

The court in this case specially points out that during a period of seventy years Kentucky had claimed the property in question and had exercised jurisdiction over it and yet that Indiana had delayed for seventy years to assert her claim to the premises, and calls attention to the evidence to the effect that Indiana had not attempted to collect any taxes from the property or the residents on it for her revenue.

This case is significant, in view of the allegations of paragraph 12 of the bill in the case of Minnesota vs. Wisconsin, found at page 6 of the Record, where it is alleged that Minnesota had exercised jurisdiction over this territory, without question by the State of Wisconsin, except as to taxes commencing in the year 1913, and that prior thereto no claim was ever made by the State of Wisconsin upon this property. The State of Wisconsin, in its answer, on page 16 of the Record, says:

> "The defendant admits that the rights and powers exercised or assumed to be exercised, if any, by the complainant or its taxing officers, were not challenged by the defendant or its taxing officers prior to the year 1913, but alleges that the defendant at all times had and has at all times exercised power and authority to tax."

The answer then goes on to assert that the taxing authorities of Wisconsin have taxed these waters as incident to the Wisconsin shore and then attempts to account for not taxing by saying that there were no improvements on the properties in question until in recent years, but the evidence disproves any attempt on

the part of Wisconsin to tax this property in dispute until the year 1913, and the taxing authorities of Wisconsin on the stand frankly admitted this to be the fact.

In *Rhode Island vs. Massachusetts*, 45 U. S. 4, Howard 591, 11 L. Ed. 1116, the court said:

> "Surely this, connected with the lapse of time, must remove all doubts as to the right of respondent under the Agreements of 1711 and 1718. No human transactions are unaffected by time. Its influence is seen on all things subject to change. And this is peculiarly the case in regard to matters which rest in memory and which consequently fail with the lapse of time and fall with the lives of individuals. For the security of rights, whether of States or individuals, long possession under a claim of title is protected. And there is no controversy in which this great principle may be involved *with greater justice and propriety than in a case of disputed boundary.*"

The evidence in the case now before the court brings this case within the above quoted decisions. There is not a single bit of evidence of any actual assertion of title or jurisdiction by Wisconsin over this area in question prior to the year 1913, although, of course, it is true that it was two years prior to that that a joint boundary commission was appointed by the legislatures of the States, but prior to 1911 there is no evidence of any action by any State officer of Wisconsin or by State authority as to the assertion of title over this area, and this is true running back for sixty years to the admission of Wisconsin into the Union. Since the early seventies down to about 1911, or a period of nearly forty years, numerous maps and charts had been published and in circulation, some of them, as above pointed out, published by authority of the State of Wisconsin, some by authority of the State of Minnesota, and they invariably and without

exception delineated the State line midway between the shores, and the only map gotten out and which at the time of this trial in 1917 was not yet published, was a tentative map by Wisconsin, claiming the boundary where Wisconsin now claims it. As soon as Wisconsin commenced to assert any claim beyond the midway line, Minnesota acted with reasonable promptness in commencing this action.

We submit that by the acquiescence of the parties and the recognition by both parties, through numerous maps, public and private, all recognizing the State line in the same place, for a period of forty to fifty years, that it is too late now for Wisconsin to claim that the boundary is otherwise than as there delineated.

VII.

The Acts of Congress defining the boundaries of the States do not locate the mouth of the Saint Louis River. Its location at the westerly end of Big Island answers every call in these Acts, in entire harmony with the language of the Acts; settles the question, once and forever, in the simplest and most just way, by giving the two States and the two cities in the two States, and the shore owners in the two States equal access to the navigable and navigated channel as improved by the United States Government, and avoids the intolerable condition of having the citizens of Minnesota cut off from access to navigation and business properties used as units subjected to the control and jurisdiction, civil and criminal, of two States and the ordinances and regulations of two cities and the taxation of personal property employed thereon in two jurisdictions. The fixing of any other than the midway lines claimed by Minnesota, would work endless confusion, cause endless litigation for years to come as to just where the real line is, unless the Court should cause it to be definitely and permanently marked on the

ground and in the water, and would extend the police and criminal jurisdiction of each city and State across the intervening waters to cover small areas and dock ends on the respective opposite shores. The midway line as claimed by Minnesota would lie wholly in the navigable waters between the dock lines on opposite shores and would occasion no more confusion than does the exact location of the center line in any other part of Lake Superior.

The State line as delineated on the Bardon and other maps is, throughout its length, almost coincident with the ship channel as deepened and improved by the United States government through these waters. While not at all points identical, still the State line so delineated and the ship channel as so improved both lie between the Wisconsin and Minnesota dock lines and therefore, for all practical purposes, they are identical. If the State line claimed by Wisconsin should be adopted, it will be seen that it would twist like a snake about the improved ship channel, which is substantially midway between the shores. Wisconsin, therefore, would reach north of this ship channel and take off certain dock ends that now do, and more which will, project from the Minnesota shore. On these docks, of course, the business is and must be conducted as a unit. Slips are and will be built alongside of them, and coal, iron, lumber and all kinds of merchandise handled over them. This personal property would sometimes be at one part of the dock, sometimes at another. If the two states and two cities are to be concerned in taxation, endless confusion will result. So will endless confusion result if ordinances and police regulations of two cities are to govern the two ends of such properties. As an illustration, recently Superior was "wet" and Duluth was "dry". If the State line runs where Wisconsin claims, it would have been entirely possible for Superior to have licensed a saloon on one of these dock ends and practically to have set up a saloon in the midst of Duluth, which was at the time the largest city in the United States to vote "dry" as a city. Again, on most of these docks

railway lines exist and the railway laws of the two states are in many respects quite different, both as to taxation of gross earnings and regulation, and this double jurisdiction would create endless trouble. Again, these docks are and are likely to have upon them public warehouses, such as elevators and other storage plants, and the laws of the two states are very dissimilar with reference to such matters, although the business must, almost of necessity, be carried on as a unit on a given dock.

The establishment of the State line where Wisconsin claims it, would absolutely shut off the owners of the Minnesota shore from reaching navigation at all and would give to the Wisconsin shore owner all the riparian rights he ever supposed he had, and in addition, enable him to stretch his ownership clear across the line of navigation and plant himself on both sides of the navigated channel, thus, perhaps, doubling the value of his property while wiping out all value from the riparian property of the Minnesota owner.

To a much less extent, such a decision would, perhaps, at a few points where the line claimed by Wisconsin twists south of the channel and south of the midway line, permit the Minnesota proprietor to do the same things on the Wisconsin side, although that line hardly intersects the present Wisconsin dock line.

Such a condition is intolerable. Fairness and common sense cry out against such an inequitable situation. On the other hand, establishing the State line midway between the opposite shores would divide the two state and city jurisdictions by a natural boundary; would do away with the necessity of one state and city reaching across the water to exercise jurisdiction over what from natural barriers is a foreign soil; would give the owners on each

shore equal access to the line of navigation; would obviate the confusion bound to result in attempting to tax business carried on as a unit in two jurisdictions; would facilitate the operation of railways and public warehouses on the docks by subjecting them to only one set of laws, and would avoid untold litigation over the exact dividing line of titles for years and probably generations to come, unless in this suit it should be so definitely and permanently marked on the ground, where filled in, and in the water, where not now entirely filled in.

The situation is such, therefore, that unless there is something in the Acts of Congress which necessarily requires the fixing of the State boundary elsewhere than midway between the shores, justice, fair play and common sense dictate that it should be half way between, giving each State, each city and each shore owner equal access to navigation from their respective shores. Let us see, therefore, if there is anything in the Acts of Congress which does not permit of this equitable solution. If the mouth of the St. Louis River is at the westerly end of Big Island, then these waters are an arm or part of the lake and the Acts of Congress then specifically run the boundary through the center of these waters, and this equitable solution is at hand and all questions involved are decided. The line then runs in the open navigated channel, occasioning no confusion. The Acts of Congress *do not locate the mouth* of the St. Louis River. The Nicollet Map, referred to in the Acts of Congress, *does not locate the mouth* of the St. Louis River. The Act of Congress admitting Wisconsin to the Union (p. 4 Record) reads:

> "Thence through the center of Lake Superior to the mouth of the Saint Louis River; thence up the main channel of the Saint Louis River to the first rapids of the same above the Indian Village, according to Nicollet's map."

A fair construction of this last clause would be, "to the first rapids of the same above the Indian Village, *according as said Indian Village is shown on Nicollett's Map*". We think there was no intention in this Act of Congress to do anything more than to fix the starting point of the western boundary of Wisconsin as at the first rapids one might find by going up the river from the Indian Village, which village was located and marked on the map. But however that may be, the Nicollet Map did not locate or show the mouth of the river. It was not marked thereon. It was no more shown than was the center of Lake Superior. If it had been shown thereon, then there would be no occasion for all the evidence taken in this case as to the location of the mouth, provided it was also clear that the language of the Act of Congress intended to locate the mouth according to the map. But the Act of Congress did not locate the mouth according to the map and the map itself did not locate the mouth. W. D. Pence, a witness for Wisconsin, says that after much trouble he finally dug out from a chest under the eaves of the War Department building in Washington the original Nicollet Map, to see if any light could be thrown on the question, but says about Nicollet's notes: "His notes were annoyingly scant at the time he was visiting the place I was most interested in, but when we got through, we felt sure, from the examination of the notes, that he had made a careful investigation of the features at the head of the lakes." (p. 431).

It therefore follows that the real question to be decided from the evidence introduced is, Where is the mouth of the river located? It matters not that on some maps the mouth may have been marked at Superior Entry if it was not in fact at that point. Neither does it matter that in some city charter that point may have been so referred to. It is immaterial that some of the United States engineers in their work have referred to some portions of these waters as a part of the river if they were not in fact such. Such designations or such references are not on a par nor in the same class as common acquiescence in a certain

line as a State boundary line. It seems that Mr. Bardon marked the Superior Entry as the mouth of the river on his map and yet at the same time delineated the State line midway between the shores. But every map that delineated the State line laid it down midway between the shores, while only a few marked the mouth of the river and as many designated the point as "Superior Entry" or "Entry" and many more, while delineating the State line, had no notation between Wisconsin and Minnesota Points. In the work of the Engineering Department of the government in the early days, in the 70's it appears that Major Houston, of the U. S. A., who was in charge of the Duluth-Superior Harbor, considered the mouth of the river at Big Island. He testified, "I would place the mouth of the Saint Louis River proper several miles above Rice's Point * * * In the neighborhood of twelve miles above Rice's Point. Not attempting to fix it definitely, I would fix it at that point where the current ceases to be affected by the oscillations of the lake." (p. 380 and 381). It seems that in 1903, or thirty years later, Captain Galliard, who was for a time in charge of the work in the harbor, had some different idea, possibly suggested by some Wisconsin adherent. He wrote a letter, Wisconsin Exhibit 16½, to the Governors of Wisconsin and Minnesota, set out at pages 1049 and 1050 of the Record (offered at page 440 and stipulated to be the same to both Governors page 1050 and page 1025). In this he said he believed that these waters were a part of the river and that the State line runs near where Wisconsin claims it. He said that so far as the United States government is concerned, by the establishment of harbor lines, the owners on the shores were given the right to fill out to the full distance from the shore to the harbor line if they so desire. He further says that this would fill up and obliterate what he refers to as the "old channel" and goes on to say, "It is evident that when in the natural growth of the cities of Duluth and Superior, the areas in question between the harbor lines and the adjacent shores are filled in, and buildings erected upon them, *the very irregular boundary line between the two states will be practically obliterated and great confusion must ensue.*" He further says that citizens have been

agitating the matter and suggesting the formation of a new boundary conforming to the permanent channel constructed by the government and which would be satisfactory to the citizens of the respective states. It does not appear upon what authority Captain Galliard made the assumption in his letter, nor does it appear that the Governors of the States then took up the question. The map which is referred to in the letter was not produced and the Attorney General of Wisconsin said he did not know where it was (p. 440). It was, however, undoubtedly a map something like Wisconsin Exhibit 31-J. Captain Galliard evidently had not studied the question of the Constitutional boundary, or he might have come to a very different conclusion. He does, however, very clearly point out the confusion and injustice resulting if it should be held to be where Wisconsin now claims it.

In 1911 the legislatures of the two States appointed a joint boundary commission, which was unable to agree. The reports of this Commission to the legislatures of the two States are set out at pages 1050 to 1059. The committees from each State contended that the State line is where each State now contends it to be. But the report of the Wisconsin committee (page 1054) recognized the inequity of the boundary contended for in saying, "It may be that on account of modern commercial conditions, it is desirable that this line be varied somewhat * * * but it (the committee) will maintain at all times that any material surrender of jurisdiction by Wisconsin shall be compensated in kind by Minnesota". The Minnesota committee reported (p. 1055), "We regard the Duluth-Superior Bay and the Bay of St. Louis as an arm of Lake Superior and as the waters of the lake and that the St. Louis Bay extends up as far at least as the union therewith of the channel that skirts around the southwesterly end of Big Island. That the Constitutional boundary through the middle of Lake Superior to the mouth of the St. Louis River and through the main channel of the river to the first rapids above the Indian Village (Fond du Lac) is

but a general outline and in no manner conflicts with this view as the mouth of the river is not fixed and from the very nature of things there was no attempt made at detail in the description of the Constitutional boundary. * * * Above Big Island it may be conceded that there is an evenly defined main channel. * * * We do not consider this a matter of trade in any strict sense but that the solution sought should be such as to give effect to the principle and purpose above mentioned. If it be deemed that such solution involves concessions, we submit that they are mutual and equitable". The solution suggested was of a line running midway between the dock lines. This is not exactly the constitutional boundary now contended for by Minnesota, which is midway between the shores, but to all intents and purposes it is the same, as both lines would lie between the dock lines, though the constitutional boundary claimed by Minnesota, halfway between the shores, might not be at all points exactly halfway between the dock lines. While the Wisconsin committee, therefore, recognized the equity of a midway line, it naturally, perhaps, hesitated to recommend such a line lest it might be crticized for yielding somewhat more area than Wisconsin would receive. We submit, however, that the contention of Minnesota as indicated in these reports is right and that the constiutional boundary is and always has been midway between the shores.

At this point we ask the Court to read pages 988 and 989 of the Record, where extracts are found from the report of the commission appointed to carry into effect the 6th and 7th Articles of the Treaty of Ghent of December 24th, 1814, and where the Commission contends that where waters divide two sovereignties the dividing line is at the middle unless clear words to the contrary are used, whether the line be through a lake or a river, citing Vattel on the Law of Nations as authority. The report of the commission further says:

"Under this view also the undersigned had regard to the *lake* by which the St. Louis River discharged itself into Lake Superior. That river after running through several lakes towards Lake Superior, when it reaches the last named lake, itself expands into a lake upwards of nine miles in length and from two-thirds of a mile to one mile in breadth."

In this report, made in 1827, therefore, the commission clearly considered these waters a *lake* and not a river.

It is therefore to be decided on this evidence where the boundary line, as fixed by the Acts of Congress, is. The long acquiescence by both parties in the line midway between the shores, through the recognition by the authorities of both States and the people thereof and the publication of maps showing this line, under the State authority of both States, would seem conclusive, within the above quoted decisions of this court, that such line is and always has been the boundary. These many maps, showing the State line, constitute the plainest recognition by both parties of the common understanding and these maps speak in concert, without a single discordant note, to the midway line as that boundary. Not till 1913 did Wisconsin do any official act in contravention of the midway boundary line, although a year or two previously the committees of the respective legislatures had failed to agree upon the question. This midway boundary, so recognized and acted upon, is in entire harmony with Minnesota's claim that the mouth of the St. Louis River is at the southwesterly end of Big Island. Nearly all of the early settlers testify that they always considered the mouth as above Big Island, and the two or possibly three witnesses produced by Wisconsin on this subject were not at all agreed as to where the mouth of the river might be if not at Big Island, one, James A. Bardon, considering it at the Superior Entry, another, John A. Bardon, saying that it was a moot question when he was a boy and

that he always considered it between Rice's and Connor's Points, and J. H. Darling that he considered it at Grassy Point, the testimony of the Wisconsin professors, as we maintain, really supporting Minnesota's contention that it is at the head of Big Island. The land on either side of these waters is almost universally spoken of as the "shores" of the bay, and not the "banks" of a river. The broad expanse of the waters indicates bays of the lake. The dominance of the lake waters along the line in question and the fact that even if all the waters of the St. Louis were diverted the waters in question would still remain of the same height and area, all show that they are a part of the lake. The fact that the oscillations and changes in the lake affect these boundary waters as far as Big Island, but not substantially further, that the waters flow in both directions and not always in one direction as would be the case in a river, prove that these waters are lake waters. The fact that these waters are admittedly subject to the ebb and flow of the true tide goes to show that they are a part of the inland sea of Lake Superior. The fact of the quite uniform depth and the absence of well-defined channels, or perhaps, more properly speaking, the multitude of channels, goes to indicate that they are lake waters and not river waters. The fact that at Big Island the waters of the river definitely and permanently widen out and cease to be confined within definite and parallel banks clearly discloses the end of the river and commencement of the lake. The fact that the points in question admittedly were formed in the lake and that if these waters are properly described as a "drowned river", as claimed by Wisconsin, it was drowned thousands of years ago by the waters of the lake, would seem to show that since then these waters have been lake waters. The fact that at Big Island the waters of the river cease to descend and from there on assume the level of the lake, signifies the end of the river.

The fact that the government, in the establishment of dock lines and the improvement of the channel, has adopted substan-

tially the midway line as the natural line to improve as between these two great commonwealths, permitting the citizens of each State equal access to navigation, would seem to require very clear and definite language in the Acts of Congress to justify holding that such Acts intended to place the State boundary at a point which would prevent the citizens of one State from reaching such navigation but would give the other State and the citizens thereof ownership on both sides of the natural line of navigation.

All these things, and more, furnish abundant evidence upon which the court is justified in holding that the mouth of the St. Louis River is westerly of Big Island; that therefore, the boundary, as laid down in the Acts of Congress and as acquiesced in by the States and the citizens thereof for half a century, is in the center, midway between the shores, and on the line which does justice to all and injury to none. Such a solution gives each State equal rights to reach navigation, injures no one and solves this question in the simplest and most complete way and solves it *RIGHT*.

SECOND.

Assuming for the purpose of argument only that the waters to the westerly of Grassy Point and easterly of Big Island are river waters and not bay waters, the evidence establishes beyond a reasonable doubt, in our opinion, that the State line is located in the "navigable and navigated channel", insofar as the disputed territory is concerned, far to the south of all dock property reaching out from the Minnesota shore, and if this contention is true, the claims of the State of Wisconsin in this suit are entirely defeated.

The *answer* of the State of Wisconsin claims that the State line, or in other words, the main channel is close to the Minnesota shore throughout the entire length of the waters known as Lower and Upper St. Louis Bays, and therefore the State line following the main channel cuts through practically all the docks extending out from the Minnesota shore along the entire water front in the City of Duluth.

If this contention were true, then the ends of these docks would be in the State of Wisconsin and millions of dollars' worth of property that has been improved by Minnesota shore owners would be the property of Wisconsin shore owners and the jurisdiction exercised by the State of Minnesota over said docks since the organization of such State was wrongful and illegal from the start.

At the trial, however, the evidence demonstrated, as we understand it, that Wisconsin did not have any claim and never made claim in good faith, that the State line cut off any of the docks in question in Lower St. Louis Bay. In other words, there is now no dispute, as we understand it, over the line easterly of Grassy Point.

If we are correct in the above statement, the sole dispute between the States now before the Court is where the State line is in Upper St. Louis Bay, or to state the issue in other language: Where is the State line from "Grassy Point" to Big Island, or to be more accurate to a point where the channels marked B, C, and B, D, on Minnesota's Exhibit 3 separate, the one channel going south of Big Island, the other going north of Big Island?

If the contention of Wisconsin is true as to this disputed territory, then the vast docks built by the different companies extending from the Minnesota shore at this point (westerly of Grassy Point) and all other unimproved dock property of great value is cut in two, and the Wisconsin shore owners can proceed with their suits to establish their claims, whatever they may be, in these dock properties, and the State of Wisconsin will hereafter exercise jurisdiction, both civil and criminal, on these halves of docks and dock properties, and the most burdensome and complex litigation will proceed that will no doubt outlive the present generation.

If the contention of Minnesota is true, all rights for all time will be settled in this disputed territory by the decision in this case, and such settlement will be in accord with justice and in accord with what the citizens of both States believed the facts to be for sixty years, that is, since the State line was established by law.

As we understand the law, the rule is settled beyond question (assuming for the purpose of argument that the waters westerly of Grassy Point are river and not bay) that the State line follows the center of the "main, navigable and navigated channel" at this point.

We take it that the rule laid down in the case of *Iowa vs. Illinois*, 147 U. S. 1, is the unquestioned law of the United States on this point. It will answer our purpose at this time to quote briefly from the decision in this case before discussing the evidence. The Court says:

> "When a navigable river constitutes the boundary between two independent states, the middle of the main channel of the stream marks the true boundary between them up to which each state will on its side exercise jurisdiction."

Again:

> "In international law and by the usage of European nations, the terms 'middle of the stream' and 'mid-channel' of a navigable river are synonymous and interchangeably used."

Again:

> "The true line in navigable rivers between the states of the Union which separates the jurisdiction of one from the other is the middle of the main channel of the river; the jurisdiction of each state extends to the thread of the stream, that is, to the 'mid-channel', *and, if there be several channels, to the middle of the principal one, or, rather, the one usually followed.*"

The Court in this decision quotes with approval from Mr. Creasy on "International Law" the following:

> " 'It has been stated that, where a navigable river separates neighboring states the *thalweg*, or middle of the navigable channel, forms the line of separation. Formerly a line drawn along the middle of the water, the *medium filum aquae*, was regarded as the boundary line; and still will be regarded prima facie as the boundary line, *except*

as to those parts of the river as to which it can be proved that the vessels which navigate those parts keep their course habitually along some channel different from the medium filum. When this is the case, the middle of the channel of traffic is now considered to be the line of demarcation.' "

Again, the Supreme Court in its opinion quotes with approval from the same author as follows:

" 'Grotius and Vattel speak of the middle of the river as the line of demarcation between two jurisdictions, but that modern publicists and statesmen prefer the more accurate and more equitable boundary of the navigable *mid-channel.* If there be more than one channel of a river, the deepest channel is regarded as the navigable mid-channel for the purpose of territorial demarcation; and the boundary line will be the line drawn along the surface of the stream corresponding to the line of deepest depression of its bed. The islands on either side of the mid-channel are regarded as appendages to either bank; and if they have once been taken possession of by the nation to whose bank they are appendant, a change in the mid-channel of the river will not operate to deprive the nation of its possession, although the water frontier line will follow the change of the mid-channel.' "

Again, this decision quotes from another author on "International Law" and says:

"As a general rule, this line runs through the middle of the deepest channel, although it may divide the river and its estuaries into two very unequal parts. But the deeper channel may be less suited, or totally unfit for the purposes of navigation, *in which case the dividing line would be in the middle of the one which is best suited and ordinarily used for that object.*"

After numerous other quotations, this decision announces the conclusion of the Court in the following language:

> "But we are of the opinion that the controlling consideration in this matter is that which preserves to each state equality in the right of navigation in the river. We therefore hold, in accordance with this view, that the true line in navigable rivers between the States of the Union which separates the jurisdiction of one from the other is the middle of the main channel of the river. Thus the jurisdiction of each state extends to the thread of the stream, that is, to the 'mid-channel', and, if there be several channels, *to the middle of the principal one, or, rather, the one usually followed.*"

As said before, we take it that this case lays down the law, and no question will be raised concerning its soundness.

It will now be our purpose to discuss the evidence bringing the claims of Minnesota within the rules laid down in the above cited decision. That there were several channels in Upper St. Louis Bay, that is, in the territory in dispute, there is not the slightest question. Therefore, under this head it becomes necessary to examine the evidence and see which was the "main, navigable and navigated" channel (the one generally used) prior to the time that the United States Government improved any of the channels or any parts of the Bay by dredging. The evidence is conclusive that there was no improvement of any channels in Upper St. Louis Bay (the territory in dispute) until the year 1893 and the last or permanent channel was not improved until 1900-1902.

Our contention is that at all times prior to government im-

provement, the "navigated and navigable channel" was to the south of all docks and dock property in the disputed territory.

Before discussing the oral testimony on this phase of the case, we call attention to some of the maps in evidence and to the history connected with their making.

BAYFIELD MAPS.

The first maps that we call attention to were made from a survey made under the supervision of Lieut. H. W. Bayfield of the English Royal Navy. These maps are Minnesota's Exhibits 7 and 8 respectively. Exhibit 7 is an inset to the larger map marked Exhibit 8. The survey from which this map was made, as we understand it, was made in 1823-1825 and the map published, according to the Act of Parliament, on the 18th day of June, 1828. Of course, this survey was made and this map was published long prior to the time that either the State of Minnesota or the State of Wisconsin were admitted as States into the Union, but at that time it is very clear that the "main, navigated and navigable channel" in the disputed waters in question was substantially, if not identically, as claimed by the State of Minnesota. And if this channel is the correct channel in this disputed territory, the docks in question fall far short of reaching to the main channel at any point. Indeed, this survey shows that the State line or main channel would be to the south of Big Island in what is known as the short cut, instead of to the north. But inasmuch as both the State of Wisconsin and the State of Minnesota have acquiesced in the state line being to the north of Big Island, the discussion of such question will not be of interest here.

NICOLLET MAP.

The Nicollet Map, which by the way is the map mentioned in the location of the boundary line by Act of Congress admitting the State of Wisconsin into the Union, does not aid us in any way in locating the channels in the disputed territory, and no attention need be given to such map at this time.

MEADE MAP.

We now call attention to Minnesota's Exhibit 1, being the map made from the survey made under the order of Captain, later Gen. George G. Meade, of Civil War fame, which survey was made in 1861 and the map published in 1863.

From the earliest date of navigation at the Head of the Lakes and after the publication of the Bayfield map to the time of the publication of the Meade map, there was nothing in the way of maps to guide mariners, except the Bayfield map, and it was generally known and used. See testimony of witness found on page 24 and elsewhere.

Referring again to Minnesota's Exhibit 1, being the copy of the Meade map. The red line on this map marked "A," "G," "B," shows the channel in the disputed territory claimed to be the "main, navigated and navigable channel" by the State of Minnesota, and the channel that was used from the beginning of navigation at the Head of the Lakes until the first dredging was done by the United States Government in the year 1893. This map shows at least three channels in this bay that were used more or less. One is the channel hugging the Minnesota shore, marked

"H", known as the Milford channel; another is the channel marked "A," "G," "B"; and the third is the channel marked "E" and "F." But the "main, navigated and navigable channel" as claimed by Minnesota is the channel marked "A," "G," "B," and we claim the evidence demonstrates beyond question that this was the channel used by practically all mariners up to the time of improvement by dredge, whether the route north of the Island or south of the Island was taken.

DISCUSSION OF ORAL EVIDENCE.

This brings us now to the discussion of the evidence on the question of where the "main, navigated and navigable channel" in the disputed territory was.

It may not be out of place to state now and here that it is the contention of the State of Minnesota that it produced practically every living competent witness who navigated these waters in the early days, and that they all testified without exception that the channel "A," "G," "B" as shown by Minnesota's Exhibit 1 was the "main, navigated and navigable" channel from the beginning of navigation at the Head of the Lakes until improvement was made by the United States Government by dredging. The State of Minnesota called Captain after Captain who had navigated these waters during the early days, and they all testified to the main channel being located as claimed by Minnesota. It is true that Wisconsin called a great many witnesses also who testified contrary to the witnesses for the State of Minnesota, but we think that a careful reading of their testimony will show the total incompetence of practically every wit-

ness that was called by the State of Wisconsin on this point, with the exception of those who corroborated the witnesses for Minnesota. It is noticeable that not a few of Defendant's witnesses were roustabouts and common sailors who testified that they worked on the boats sailed by the Captains called by the State of Minnesota, and the former claimed that they used one channel and sailed on the same boat and on the same trip with the Captains, while the Captains and those in charge of the boats testified that they used another channel. In other words, these roustabouts testified to coming down one channel and the Captains testified to coming down a different channel, although both Captains and roustabouts were on the same boat on the same trip.

JOHN G. HOWARD.

Minnesota called as its first witness Mr. John G. Howard, whose testimony is found at page 44 of the Record. He testified that he was a resident of the City of Duluth; that he had lived at the Head of the Lakes for 59 years; and that he was 61 years old in November following the date of trial. He testified that he was in the mining and land business at the present time, but that he formerly followed the water. The evidence shows that he is a man of large affairs and had dealt heavily in mining and timber lands in the State of Minnesota. He also testified that he had been connected with the Yawkey Iron interests, a very large mining concern, for the past several years and had purchased 70,000 acres of land for this concern on the different ranges in Minnesota and Wisconsin. (See fols. 8 and 9). He then detailed his early experiences as a boy and young man at the Head of the Lakes. He lived in Superior, Wisconsin, when a boy, and at an early age commenced to raft logs down the bays in question to his father's saw mill, and kept this up for many years. (See p. 45). He had hunted and fished on the

waters of these bays during all his boyhood days, aside from traversing them in all sorts of boats. He then described how he worked with his brother, Benjamin F. Howard, in poling logs down the waters of these bays for a good many years. (See p. 46, fol. 12). He then testified that later on he and his brother ran a small steamboat on these bays and in the head waters of Lake Superior. (See p. 47). They hauled lumber from the saw mill located on these bays down to Silver Island in Canada, also towed logs down these bays to his father's saw mill when they were not making trips to this Island. He testified that he spent ten or twelve years in poling logs from these bays down to his father's saw mill (p. 47).

He then described the boat Lottie Bernard that his father purchased for the purpose of navigating the waters in the disputed territory and the waters at the Head of the Lakes. He said she drew seven or eight feet (See p. 47, fol. 13), and that she was about 150 feet long and carried about 100,000 to 150,000 feet of lumber. His father furnished the lumber for the Superior Court House and took the lumber down by raft from the saw mill. He then testified that he was familiar with St. Louis Bay, Upper and Lower, Superior Bay, and in fact all the waters at the head of Lake Superior. Mr. Howard was then called on to mark the channel that was used by all navigators in the early days before dredging was done, and he is the witness that put the red line on Minnesota's Exhibit 1 running from "A," "G" to "B." (See p. 49).

Then he testified as follows:

"Q. Now I want you to explain, in your own words, just exactly what those lines indicate. A. They indicate the channels that were navigated from the time I first operated on those waters until the time it was dredged.

Q. Until the time it was dredged. Do you recollect

about what time it was dredged? A. No, sir, I do not.

Q. You had quit operating there at the time? A. I had." (p. 49).

He was then asked this question:

"Q. Now what does the red line from A to B indicate, and from B to C? A. That was a channel running up the river also; went around the other side of the island, Big Island.

Q. Big Island? A. Yes, sir.

Q. That is now called Whiteside also? A. Yes, sir.

Q. Also called Clough Island? A. Yes, sir.

Q. And sometimes the Island? A. Yes.

Q. And sometimes Big Island? A. Yes." (see p. 50, fol. 18.)

Again he was asked:

"Q. Now, are you familiar, or were you familiar, with the channels that were mostly used by people navigating St. Louis Bay in those early days, when you first started? A. Yes, sir.

Q. Which was the channel that was used the most during all that time? A. Shall I use the letters?

Q. Yes. A. From A to B and to D, and from there on the south side of the island, the Big Island." (See p. 50, fol. 18).

We wish to specially call attention of the Court at this time to the fact that whether the navigators took the route northerly of Big Island or to the southerly of Big Island, according to the testimony of Mr. Howard and other competent witnesses who testified, the same route or channel was taken from the point G to B, which covers the disputed territory easterly of Big Island. He testified that the "cut off" or the route to the southerly of Big Island was the one usually used. That is not material here, however, because as said before the territory is

not in dispute, but it simply shows that they *followed the route and survey laid out by Bayfield and his assistants.*

Mr. Howard testified, that all boats at the time he navigated these waters and before dredging was done by the United States Government used the line G to B, whether they went north or south of the Big Island, as follows:

"Q. The southeast point of the Big Island. Now what was the depth of water in these different channels that you have mentioned here, in a general way, and why was the southerly channel used the most and the most preferable to the mariners and navigators or shippers at that time? A. It was shorter and just as deep water.

Q. Just as deep water? A. Yes, sir.

Q. Now I want to call your attention, Mr. Howard, to a deep hole to the northerly of the red line running from A to B, and then from B to C, and will ask you whether or not that was ever used by you or by people running boats generally at that time? (This 'deep hole' is the route or channel now claimed by Wisconsin and which channel or hole is marked 'H' in red on Minnesota's Exhibit 1 and known in the evidence as Milford channel.) A. I never saw it used, no, sir; never knew a boat to go around there.

Q. What was the condition of that hole at the point just northerly of the point marked C, that is, as to shallowness and there being a bar? A. Why, there was always a bar across there; it was impossible to get through from the channel down there, to get through into that hole.

Q. And then, as I understand your testimony, the sum and substance of it is that that hole to the northerly, shown by these soundings on the map Minnesota Exhibit 1, to the northerly of the line running from A to B and B to C was not used for boats at all? A. No, sir.

Q. Could you use it for a small boat or row boat? A.

Boats could go in there; I guess they towed logs out of there, and one thing and another, but they went in from this way.

Q. That hole is more particualrly described on this map, Minnesota Exhibit 1, as a sort of a half circle, starting from the line A to B and running around to the point C marked on the map." (See p. 51).

Here it will be seen, according to the unqualified testimony of Mr. Howard, who certainly was a competent witness and had great experience, that the "main, navigated and navigable channel" through the disputed territory was G to B, and that the channel claimed by Wisconsin, known as channel H, or "Milford channel," was not the navigated or navigable channel on account of a bar being at the northwesterly end thereof, and of course it was much longer.

It must be borne in mind that the testimony is practically undisputed (and the Meade map demonstrates) that until dredging was done by the United States Government in the year 1893, no boats drawing over eight or eight and one half feet could go up as far as Big Island in any of the channels, owing to the shallowness of the waters to the easterly of Big Island. It is true that certain of the witnesses called by the State of Wisconsin testified as to the navigation of these waters by boats drawing thirteen or fourteen feet prior to any dredging done by the government, but it was perfectly clear that these witnesses were mistaken, to say the least, as it was impossible for any boats of such draft to go up to Big Island before dredging was done. (See soundings on Meade map, Minnesota Exhibit 1, as well as testimony of Minnesota's witnesses).

Mr. Howard then testified as to what these Bays were called. He said: Grassy Point divides the two bays. East of

Grassy Point is Lower St. Louis Bay and to the west of it would be Upper St. Louis Bay." (See p. 53).

He then testified that in 1886 to 1890 he and his partners operated a boat (a side wheel boat) on these waters every season, and this was prior to the time that any dredging took place. (See p. 53). He said this boat did an excursion business and was about 100 feet long. It carried excursions from Duluth and Superior up to Fond du Lac. He testified that the boat drew six or seven feet of water, and that he always used the channel from A to C, which includes the channel G to B covering the disputed territory in this case. He further testified that "this route was the practice of all the boats." (See p. 54, fol. 24).

He then described again what all of the red lines placed on Exhibit 1 by him indicated. (See p. 57).

His testimony on cross-examination is found from pages 60 to 74 inclusive, but while we cannot take the space to call attention specifically to his testimony, we ask the Court to peruse the same, as it only emphasizes the exact knowledge that Mr. Howard had of these waters in the early days and the accuracy of the man's mind and memory in testifying. *On pages* 64 *and* 65 *he testifies to his almost daily navigation of these channels for a good many years.* On page 66, fol. 431, he testified that he never used in all his navigation of these waters in question the channel marked H or "Milford channel" on Minnesota's Exhibit 1, being the channel that hugged the Minnesota shore, and is now claimed by Wisconsin to be the State line. Indeed, Mr. Howard, in harmony with the testimony of practically every other competent witness who testified, stated that he had tried to go down over the bar into channel H and never was able to do it prior to the time of dredging. (See p. 78).

LEONIDAS MERRITT.

The next witness called by the State of Minnesota was Leonidas Merritt. His testimony is found at page 82 et seq. He testified that he was 73 years old; that he had been a resident of Duluth, Minnesota, for 61 years (see p. 82). He is a man that has been prominent in the business, social and commercial life of the city during practically all the time that he has lived in Duluth after reaching manhood. He was a member of the City Commission for four years under the new form of government, his term just expiring. He was a Civil War veteran, having served in the Civil War for three years (see p. 82). He was one of a family of eight boys and one of the earliest pioneers at the head of the Lake. Immediately following the Civil War he sailed Lake Superior for five years, including the waters in question (See p. 83). He lived in Oneota, now a suburb of Duluth, located on the shore of Lower St. Louis Bay and within sight of the Upper St. Louis Bay, which are the waters here in dispute. He testified as to his familiarity with the waters of Upper St. Louis Bay as follows:

> "A. Yes, we were quite familiar with it, especially when I was young because there was no roads or hardly any trails and we used to go by boats, small boats, canoes, one thing and another, travel around that way, to begin with." (See p. 84).

Again he testified:

> "Q. Did you in other years traverse these waters up above Grassy Point and up to Fond du Lac? A. Why, at the time they were building the old Lake Superior and Mississippi road we were engaged in freighting for the road and its contractors, as far as Fond du Lac from Connors Point and up in through here too.
>
> Q. That is freighting by water you mean? A. Freighting by water, yes.

Q. What kind of a conveyance did you use—vessel? A. We had a little sail scow that we used to sail when there was a wind and pole when there wasn't any wind. Worked by the hour and we was young men foolish and we thought we had to work all the time.

Q. And that occurred about what years? A. Well, let's see.

Q. This freighting for the building of that road? A. I can't recollect. It was the time they was building the St. Paul and Duluth road.

Q. That used to be known as the Lake Superior and Mississippi? A. Yes.

Q. Was that built about '69 or '70? A. Yes, I think it was '69; I can't fix dates; I don't remember.

Q. Did you in those days have a pilot's license? A. How is that?

Q. Did you in those days have a pilot's license or had you at any time? A. No, I never had a pilot's license. My brother was a pilot. I never had a pilot license but I often piloted steamers." (p. 84).

His attention was then called to Minnesota's Exhibit 3, and he testified as follows:

"Q. Now, calling your attention to this Minnesota's Exhibit 3, and starting about the head of Grassy Point there, I will ask you what the usual course of navigation from there up towards Fond du Lac was, if you can tell? A. Well, we used to go—at the end of Grassy Point there was what we called the Devils Elbow there and there was a channel turned down in there and then there was a kind of a channel across here (indicating). We used to go across something near where this red line is.

Q. The red line you refer to is the red line, A, G, B? A. Yes." (See p. 84).

He then testified that all water traffic in those days while he was familiar with navigation took the course "substantially the same as A, E, G and B," on Minnesota's Exhibit 3. (See p. 85).

He testified:

"A. Oh, yes, they all went up in there, all the old passenger steamers.

Q. That is the south channel? A. South channel.

Q. And after you got to B your pencil just now pointed to the south channel? A. Yes, sir.

Q. South channel of Big Island? A. Yes. That is away back in 1857 and steamers that used to run up to Fond du Lac used to take this channel; the old Seneca was one and the side wheel steamer, I forget the name of it, used to make almost daily trips. They always took this channel." (See p. 85).

He then testified as to his being a publisher of maps for many years at the Head of the Lakes (p. 86). He further testified as to his experience as an explorer for iron ore. This testimony established the fact that besides being well known otherwise, he probably was the discoverer of more iron ore on the Mesaba Range than any other man that ever lived. While he was not a pilot himself, he was very familiar with these waters and very familiar with the channels, and there was no doubt in his mind that the "main, navigable and navigated channel" at the disputed point in question was as claimed by Minnesota, being the channel G-B on Minnesota's Exhibit 1. His testimony covered his iron ore and mining experience and his building of the Duluth, Missabe & Northern Railroad, is found at pages 94 et seq. of the Record. His testimony is very interesting throughout from a historical standpoint. It perhaps is not out of place to state now and here that the standing of both Leonidas Merritt

and his brother Alfred Merritt who testified is above reproach in the City of Duluth and throughout the State of Minnesota, and the testimony of the witnesses called by the State of Wisconsin did not at any time question the integrity of the Merritts or the truthfulness of their testimony or the accuracy of their knowledge as navigators on the waters in question. But on the contrary the Wisconsin witnesses admitted the competency of the Merritts as navigators of the waters in question.

ALFRED MERRITT.

We next call attention to the testimony of Mr. Alfred Merritt, a brother of Leonidas Merritt, whose testimony we have just referred to. His evidence is given commencing at page 110 of the Record. He stated that he had resided at Duluth, Minnesota, since 1856; that he was 70 years of age; and that he came to Duluth when he was nine years old. He testified that as a boy he used to boat around the Bay and had his fun sailing boats, etc. As he grew to manhood he worked in the lumber woods and sailed the Great Lakes. In 1864 he was sailing on the Lake and used to load lumber at the place called "Milford" above Grassy Point, going out of the "Milford channel" or channel marked H on Minnesota's Exhibit 1 (see p. 111). He testified, as many other witnesses did, that channel H was used only for the purpose of going in to Milford and getting lumber and coming back again the same way, and that it was never used by navigators to go up the Bay and could not be used by navigators on account of the bar up above Milford. He tesitfied that

> "in 1868 I was a pilot on the tug Agate, towing stone; took the stone above Fond du Lac, the Sandstone, to the Superior entry; and after that I was navigating the rivers and bays here, at the head of the lakes.

Q. Did you have a pilot's license? A. Yes, sir." (p. 111).

Again, he testified:

"Q. And you continued to navigate these waters for how long a period; that is, until how recent a date? I mean in a commercial way. Of course you have been up and down for other purposes. A. Yes. I was just trying to think back. I think it has been 34 years since I quit sailing.

Q. Along about 1883? A. Somewhere there, yes.

Q. But up until that time you were sailing up and down these waters a good share of the time, were you? A. Yes, sir, and the lake." (See p. 112).

He then testified to the different boats he had sailed and his experience with the waters in question:

"Q. Now calling your attention to Minnesota Exhibit 3, I will ask you when going up these waters towards Fond du Lac, and when you got opposite Grassy Point, what was the course that traffic usually and generally took from there on up towards Big Island? A. We avoided these here—there was a rush bed here (indicating). We went here and just skirted this island here, and up through here.

Q. The line you have just pointed to is substantially the line marked A-E-G-B-D on this map? A. Yes.

Mr. Fryberger: Marked in red?

Mr. Bailey: Marked in red.

Witness: Yes, practically that is the point. There was a point of rushes out here, and we went here. (Indicating).

Q. Where you say those rushes were was just easterly of the red line between the points marked B and G? A. Yes, sir.

Q. Now was there another channel southerly of that, that was sometimes used? A. Yes; when we went to Milford we used this other channel here. (Indicating).

Q. I say southerly of this. A. Oh, southerly?

Q. Yes. A. Well, according to the wind sometimes; we used to go over here, but not for tugs as a general thing. Here we are." (See p. 113).

It will be seen by this evidence that according to the testimony of Mr. Merritt the "main, navigable and navigated channel" in these disputed waters was the channel marked G to B on Minnesota's Exhibit 3, being the channel claimed by Minnesota and claimed by Mr. Howard and practically all of the witnesses who showed competency to testify in the case. He was asked with reference to channel H as follows:

Q. Now calling your attention to this sort of white curved line on which I have placed an H on this Minnesota Exhibit 3, I will ask you if that line or channel was commonly used at all? A. Well, just for to go to Milford we used that there.

Q. That is just when you had a load to go up to some point on that line? A. Yes on that line.

Q. Now was there, or was there not, along towards the westerly end of that which appears to be a channel and on which the H is placed, a bar or a shallow place along just easterly of the point marked C? This is marked C. A. There was a bar—*you will see it on the original map*—there is a bar there marked in 7 and 8 feet over here; we used to avoid that by going in here sometimes; but that is above Milford dock.

Q. And was this line which is marked A-E-G-B and C a better line for navigation than to go around on this curve marked H? A. *Oh, yes, it was a good deal straighter; it was a better line, sure.*

Q. *And practically all the traffic took that line?* A. *Yes, sir.*

Q. Now in taking this line marked A-E-G and B, supposing you are going to the north of Big Island, what would you do when you got to the point B? A. We used to go straight through here to the north of this island here. (Indicating).

Q. You see this is sort of an indication of an old channel; this is the dredged channel? A. Yes, sir." (See p 114).

According to the testimony of Mr. Alfred Merritt, who, a said before, is a man of standing and who was a navigator o experience and a pilot or Captain for years and sailed thes waters, can there be any doubt that the channel markedG-B o Minnesota's Exhibit 3 was the "main, navigable and navigate channel" in those early days before dredging was done? Eithe Mr. Howard, Mr. Leonidas Merritt and Mr. Alfred Merritt ar not telling the truth, or the channel G-B was the "main, navigabl and navigated channel" before the dredging was done.

In speaking of the Bayfield map, Mr. Alfred Merritt said

"Q. Calling your attention to Minnesota Exhibits and 7, the so-called Bayfield map. Was that map a ma which was in common and general use in the early days an well known amongst navigators? A. *We had no other pl except the Bayfield plat up till after—Meade was here 1860*—General Meade—or Captain Meade, of the Engine Corps, was here in 1860, and then he came in 1861 agai he surveyed the head of the lakes in 1860; and then he can in the spring of 1861, but the Rebellion had commenced a he went away, joined the Regular Army. He was a ca tain of engineers, in the Engineers' Corps.

Q. *Then, that was the only map in use up to that time?* A. *Yes, sir. And I think they did not get the real chart out until* 1866, *the chart of the head of the head of the lakes. The Meade chart was published, I think, in* 1866, *and this was the chart they used at that time, the Bayfield chart.*

Q. Just state what you know or what is generally understood as to the accuracy of that map. A. *It is reported, as understood, that Meade said it was the greatest engineering feat that had ever been, and the quickest time and the correctest map that had ever been made up to this time—that Bayfield chart."* (See p. 121).

Of course, as said before the Bayfield survey showed the "main, navigated and navigable channel" westerly of Grassy Point to be the channel claimed by Minnesota, being the red line marked on Exhibit 1 as G-B. The cross examination of Mr. Merritt is found on page 124 et seq. This cross examination accentuated the accuracy of Mr. Merritt's testimony in chief and showed his great familiarity with all the boats that were plying these waters in the early days. He gave the names of practically all the boats that were sailing at that time and who commanded them, etc.

Mr. Merritt testified that the surveyor who surveyed the state line between Wisconsin and Minnesota from Fond du Lac south went just as far up the St. Louis River above Big Island as he could to start his line, and stated he went in high water and for that reason went a mile and a half above the first rapids and thus gave to Wisconsin a strip of land a mile and a half wide extending from the St. Louis River to the St. Croix River, more than she was entitled to under the Act of Congress fixing her boundaries. Neither Mr. Merritt nor ourselves knew whether to treat this as a joke on the part of the surveyor until later on it developed from a historical document introduced in evidence

and written by a professor of the Wisconsin University, who testified as a witness for the State of Wisconsin that the surveyor had in this manner given to Wisconsin a mile and a half more territory from the St. Louis River to the St. Croix River than she was entitled to. It would seem that Wisconsin's bad appetite for grabbing off territory has never quite been satisfied. We might add at this point that neither Mr. Howard, Mr. Leonidas Merritt nor Mr. Alfred Merritt had any interest of any kind in this action or in the lands involved or in any the suits instituted. They were merely testifying as witnesses in the case from their own knowledge.

It will not be out of place at this point to call attention to the testimony of Mr. Alfred Merritt, who was recalled for further testimony, on page 975 of the Record. He started out by giving further details of his exact and accurate information and experience with reference to the navigation of these waters, and we call especial attention to the fact that he testified that up until government dredging work was done, which the Record shows was not earlier than 1893, no boat could get through St. Louis Bay drawing more than eight feet of water. He also testified that in the "Milford" channel, being channel H and above Milford, eight feet was the limit of draft in at least two points in that so-called channel (See p. 977).

He testified:

> "Q. These two places the depths you have given were as much as you could get through there? A. As we could get through there with, yes, sir. Of course, from Milford down there was lots of water, around the Devil's Elbow, and a third of the way into St. Louis Bay, lower St. Louis."

He also testified and its importance will be shown hereafter concerning the half-breed Indian, John Chippway. John Chip-

peway had testified that he worked as a deck hand on scows hauling rock from Fond du Lac down to Superior entry, and that Alfred Merritt and Capt. Wheeler were Captains of the tugs towing such scows. He, Chippeway, testified point blank that they always came down with the rock in the Milford channel, while the Captains who had charge of the tugs doing the work, always came down in the "main, navigable and navigated channel" or the channel marked G-B on Minnesota's Exhibit 3. Mr. Merritt described the half-breed in the following language:

"A. I think the first time I saw the boy was the summer of '68. I was with Captain Wheeler here and I was running the Agate and I think he was on the scow along with a fellow named Jim Young, foreman of the scow, and I remember the boy then, half-breed boy, very pleasant boy. I remember him then; saw him many times since.

Q. He was never captain or anything of that sort? A. Well, he might have been later on, I don't know.

Q. While you knew him? A. Oh, no.

Q. Just doing rough work while you knew him? A. Yes, yes." (See p. 977, fol. 1527).

Again, Mr. Merritt testified concerning the traffic, comparing the traffic on the main channel or the channel marked G-B and the Milford channel:

"Q. Referring to Minnesota's Exhibit 1, you have already testified with reference to that, but taking the commercial traffic that went up beyond Grassy Point and up to Big Island, by there in the early days, what proportion of the traffic would you say went either on the line A, or say, what proportion of the traffic went on the line A, G, B, as compared with the traffic that went through the channel

marked H? A. *I think nine-tenths went up this way, just a rough guess.*

Q. You would say nine-tenths would go up this line A, G, B; that would include what turned off and went up the cut-off? A. Yes.

Q. And what went up the line B-C? A. Well, I should say nine out of ten of the boats went up this what they called the short-cut.

Q. Then there would be a larger proportion including those that went up here, A, G, B, C, if you combine those with what went on the short-cut? A. *Yes, I think so. Nothing went that channel only as went here to this dock.*

Q. *That is, you are referring to the channel marked H?* A. *Yes.*" (See p. 978, fol. 1527).

We think that this testimony given by Mr. Merritt is more than conservative when we compare all of the testimony in the case with reference to the "main, navigable and navigated channel" in the disputed waters, i. e., practically all of the commercial traffic from Grassy Point westerly to Big Island was over the channel marked G-B and not over the "Milford" channel.

Again, Mr. Merritt was asked concerning the testimony of John Chippeway, the half-breed Indian who testified that he came down the "Milford" channel with scows of rock at all times:

"Q. Mr. Merritt, this John Ojibway or John Chippeway, as he was called, testified for the State of Wisconsin that he was on those scows in which you and Captain Wheeler were hauling rock and that when you came down from Fond du Lac that you always came down to the north of Big Island and always came down through by Milford on this channel marked H, instead of coming down the

channelC, B, G, and A, or down the channel D, B, G and A; now what have you got to say about that?

Mr. Gard: Object to this. I don't think Mr. Chippeway testified to that.

Mr. Fryberger:

Q. I read his testimony. I know what he testified to. I want to ask you whether or not John Chippeway is mistaken about the stone ever coming down that channel H? A. I did come around there and go around this island one time. It was at night, dark, in the night, and I lost this other channel and this line down here, and I think Chippeway was on the scow, and I came around here with a lead line and came through here in the night.

Q. When you got down to C did you come down C, G and B in the usual way? A. No, I didn't. I calculated to go through there but when I struck this shoal place I knew I was there, but the next sounding showed deeper water, and I followed that deeper water down. That is the only time I remember of going there.

Q. Is that the only time you ever came down with a scow of rock through Channel H? A. As I remember; to the best of my memory.

Q. Otherwise you always came on the lines you have indicated? A. Yes, sir.

Q. And you got on that time by mistake? A. Yes.

Q. And that was in the night? A. Had scows on the tow lines; came down that way." (See p. 979).

On the cross-examination which followed and is found on page 979 et seq, he simply clinched his testimony on direct examination, showing conclusively that the "Milford" channel was only used for the purpose of hauling in and out of Milford, and that the channel of commerce in the disputed territory was G-B.

It is a singular thing that these Captains and pilots and in

fact every one that was shown competent to testify testified that the channel G-B was the channel of commerce prior to government dredging, while the roustabouts working as deck hands on scows (after making a trip up the river with John Bardon and perhaps thirty other witnesses for the State of Wisconsin on the Sunday preceding the date of giving their testimony) came down on the same trips on the same boats through entirely different channels.

BENJAMIN F. HOWARD.

We now come to the testimony of Capt. Benjamin F. Howard. His testimony is found at page 150 of the Record. He came to the head of Lake Superior with his mother, who joined her husband in 1857. Captain Howard was born in 1852 in the city of Sandwich, Massachusetts. He was therefore five years old when he landed at the head of the lakes. His father opened a mercantile business, saw mills, and other lines of trade. Young Howard spent his boyhood days on the waters of Superior and St. Louis Bays. He was very familiar with such waters as a boy; and as soon as he was old enough to work he commenced cutting logs for his father on the lands adjoining these waters in question and used to take rafts down to his father's saw mill over these waters. His thorough familiarity with the waters in question cannot be questioned, nor did any one attempt to question his familiarity with these waters. Later on his father purchased a tug and young Howard with his brother John, (who testified as above set out), were put in charge of it, and from that time until he left Duluth in the year 1913, he navigated these waters and waters of Lake Superior almost continuously, one might say. He was a man who had taken active part in the social, political and financial life of the City of Duluth; he was President of the City Council for a number of terms and was a

man of large affairs for many years. He explains his familiarity with logging, rafting, booming and navigating on pages 152, 153 and 154 of the Record. His first experience as a navigator was in the year 1867. He testified:

"Q. What was your earliest experience in running a boat yourself? A. My earliest experience was on the Lottie Bernard.

Q. When did your father get that boat? A. I think it was in 1869.

Q. And did you commence to run the boat at once? A. I went right aboard of her. I was on it as long as he owned her.

Q. Had you any experience prior to that time in navigating a boat? A. No, sir—that is, not a steamboat.

Q. Did you run a sailboat? A. Lots of sailboats.

Q. Up around the bay? A. Up around the bays and rivers.

Q. When did you get your captain's license? A. I think I had my first issuance of papers from Freeman Fitzgerald in '71.

Q. To get your license did you pass an examination as to your knowledge of Lake Superior waters or all these bays tributary? A. Yes, sir.

Q. Did that include all the bays up as far as Fond du Lac? A. I can't tell you what the questions were, at this time.

Q. Was it necessary for a pilot, in order to get a license, to have knowledge of all these bays and Lake Superior? A. Yes, sir.

Q. And your first license was issued to you in 1871? A. That is my recollection, yes, sir.

Q. How long did you continue to have a license from

that time on? A. I have had one ever since. I have an expired copy now in my pocket.

Q. Before you left for Canada you had a license— A. I had a license all the time between the expiration of my license in 1872 and the reissuing in, I think, 1890, I am not positive about that.

Q. These licenses run for five years? A. They do now. At that time they ran for one year.

Q. When you got the Lottie Bernard what did you do? Just tell us in your own language what you did with the boat, what your duties were and where you ran it? A. I went aboard and I wheeled on her.

Q. To start with? A. To start with.

Q. Who was captain at that time, or master? A. The first man's name was Wilson.

Q. And you were wheelsman? A. I was wheelsman under Captain Wilson.

Q. How long were you wheelsman, about how long? A. About two years.

Q. Where did the boat run during all this time? A. When we was outside we used to carry lumber to Port Arthur and Silver Island.

Q. From where? A. From his mill at Superior.

Q. When you say 'outside' you mean outside of the Superior entry, into the lake? A. Outside the Superior entry, yes, sir.

Q. From this mill? A. Yes, sir.

Q. When you were inside where did you run? A. We used to go up the St. Louis Bay and River and tow logs and run excursions, whatever we could do.

Q. How long did you run that boat as master? A. I never was master.

Q. Did you ever run the boat yourself? A. Yes, sir, I ran the boat myself. I was mate of it two years.

Q. You were mate of it? A. Yes, sir.

Q. Where did you run the boat? A. When we went up the St. Louis River there would be lots of times we didn't have a master. I used to take her up and handle her.

Q. Now, were there any boats from that time on different craft, sailing craft, steam craft, navigating these waters at the head of the lakes? A. Yes, sir.

Q. And I will ask you whether or not these lake men discussed all these different matters the way water men do, as to channels and harbors and so on? A. Yes, sir.

Q. Were you thoroughly familiar from the time, we will say from 1870 on, with the channels of St. Louis Bay and Lake Superior? A. Yes, sir." (See pp. 154, 155 and 156).

He then explained the characteristics of the shore which is called attention to in another part of this Brief, and then his attention was called to the channels that were used before Government dredging was done:

"Q. I call your attention to the part of this map that shows deep water in a hole running from the point marked G on the map under what is known here as the Carnegie Coal Dock and another one marked 'Coal Dock' which is now the Zenith Furnace, I think. I call your attention to a point marked H (Channel 'H' is the 'Milford' channel). I want to ask you whether or not you ever used that in taking either channel in going up the St. Louis? A. Never did.

Q. Did you know of any boats doing it? A. Not to my knowledge.

Q. Did you ever see any boats in there other than those going to Milford? A. Never did.

Q. Was that used, this deep hole which is marked H, for any other purpose by navigators excepting for the pur-

pose of going to Milford to get lumber? A. Not to my knowledge.

Q. How did the boats get that lumber that was sawed at Milford? A. Sailing vessels used to go up there and load part of the cargo, George M. Ford and George R. Fetter, and the old Neptune and sometimes the Pierpont.

Q. Was that a sailing vessel too? A. Yes, the Pierpont was the larger of the lot; the George M. Ford and the George R. Fetter, were boats that drew about six feet loaded.

Q. Could a steam vessel drawing the water they usually drew at that time get up to the dock on the main land at Milford? A. No, sir." (See p. 157).

It would seem perfectly clear from the testimony of Mr. Howard that the channel G-B was the channel of commerce at all times until Government dredging was done. The "Milford" channel was not even known as a channel, except to go to Milford. Mr. Howard then testified as to his familiarity with the way the "Milford" channel was used in getting lumber in and out of the little dock at Milford. (See p. 158).

His attention was now called to Minnesota's Exhibit 3 and he was asked concerning the main route of travel northerly and southerly of Big Island, and he very clearly testifies that the channel to the south of Big Island was called the "Cut-Off", as it was much shorter, but whether boats went northerly of Big Island or in the "Cut-Off" south of Big Island they always took as the main traveled channel, the channel marked G-B on Minnesota's Exhibit 3. In fact, this was in harmony with all competent witnesses who testified in the case.

Mr. Howard further detailed his familiarity with all waters in all the bays at the head of Lake Superior. No attempt was

made to question his competency or the accuracy of his testimony insofar as cross-examination was concerned. His cross-examination merely demonstrated the accuracy of his testimony given on direct.

CHARLES A. KRAUSE.

The next testimony that we call attention to is that given by Charles A. Krause. Such testimony is found on page 170 et seq. He testified that he was 63 years old; that he had lived at Fond du Lac for 60 years; was a married man; had a family; and ran a general merchandise store at that point. It is then seen that he lived at Fond du Lac practically all his life, being at the head of these bay waters. He testified that he spent his early days as a boy hunting and fishing on these waters, and was very familiar with the situation. He made a great many trips over these waters to Duluth and Superior from his home at Fond du Lac and noticed the route traveled by boats prior to the time that Government dredging was done.

He testified as follows:

"Q. Now I want to call your attention on this map to a hole, or sometimes they call it a channel, running from a point off Grassy Point from the letter G marked in red, up in a northerly direction, under Carnegie Coal Dock, what is marked as Carnegie Coal Dock, past the red letter H, and under the point of land marked on this map 'Coal Dock' up toward the point marked 'Milford'. Do you recollect Milford? A. Yes.

Q. Now, I want to ask you if in the trips that you made down the river, down this St. Louis River and down the bay, whether you went north of Big Island or whether

you went south of Big Island, did you ever sail around in through this hole? A. No, sir.

Q. Did you ever know of it being used by boats, except to go up to Milford and back?

Attorney-General Owen: Objected to as leading.

A. No, I did not." (See pp. 171 and 172).

Mr. Krause went so far as to testify that even as to the north of Big Island there was very little travel at any time to his knowledge, most everything taking the short cut and then down channel marked 'G'-'B' on Exhibit '3'. His cross-examination was corroborative at every point of his direct examination.

ALBERT SWENSON.

The next witness we call attention to is Albert Swenson. His testimony is found at page 176 of the Record. He was a resident of St. Louis County, born in the year 1862, and born in what is now a part of the City of Duluth and what was at the time of his birth Oneota (see p. 176). He lived at the place of his birth until 1870. From 1870 to date he lived on the shores of Upper St. Louis Bay, which is right opposite the waters in dispute in this case. From that time on to date of the trial he lived on the shores of Upper St. Louis Bay, where he could see the traffic daily over the disputed waters. He was a man who had fished and hunted and sailed these waters a great deal, but was never a navigator. He worked all over the waters of the Bay as a log driver and testified that he was familiar with every foot of it. He did a great deal of logging on his own account and also logged for others, and in the summer time worked on his farm on the shores of this Lake when not working on the Bay.

He was asked this question:

"Q. From your place of residence, and being here so long, were you familiar with the traffic up and down these waters between Grassy Point and Fond du Lac, say? A. Yes, sir.

Q. The course of traffic? A. I saw most of it, I guess, what was going on." (See p. 177).

He testified that the main channel used for navigation and commerce was the channel marked A-E-G-B-D, and whether they went north of Big Island or south of the Island constituting the "Cut-Off," they took the channel A-E-G and B. (See p. 177).

Then he was asked this question:

"Q. Probably you did not quite understand the question, and so I will ask another one. Supposing that one were starting or coming along by Grassy Point and going up to Fond du Lac and expected to pass north of Big Island; then what course would be taken from Grassy Point? A. Well, you would take that same route I just described, through here. I would call that north of that swamp island. Yes.

Q. Now, the route that you have indicated is about on the line A-E-G-B-C and then from there on extending up along what is marked on the map as white tracing? A. Yes, sir." (See p. 178).

On his cross-examination he showed his great familiarity with these waters and with the route of travel and was familiar with the boats that traveled these waters (see p. 182). He testified on his cross-examination concerning his familiarity with these waters:

"A. Well, I have work along the whole river, from Fond du Lac to Grassy Point. *I do not think there is a foot of ground in the bay but what I worked on.* I picked up logs that were hung up on the bars, for the companies that owned them, and had (you might say) to use my pole all over; I could not move the logs or get anywhere without poling; had to be done by hand.

Q. Yes. But you do not mean to be so extravagant as to say not a foot of the bay? A. I do not mean to say every foot, because that would be impossible, but there are very few spots but what I worked over." (See p. 183).

His cross-examination further demonstrated that the channel of commerce before Government dredging was done, from Grassy Point to Big Island, whether the traffic went north of Big Island or south of Big Island was over the route marked G-B on Exhibit 3. (See pp. 188, 189 and 190).

We specially call attention to the fact on page 190 that there was just as deep water in the short cut south of the Island as there was in the water north of the Island. He testified on cross-examination concerning the route usually traveled:

"Q. It was the short route. Now, when you get down here to near Grassy Point and from the point that was marked C to A on Minnesota Exhibit 3, the shortest route that you have described on this map with a pencil, isn't it? A. Yes, sir.

Q. And that shows depth of water 7, 9 and 10 feet, doesn't it? 7, 9 and 10 feet (pointing on the map). A. Yes.

Q. And that route was taken largely because it was the shortest distance, wasn't it, across there, and the boats that went over there did not draw any more than 5 or 6 feet of water, or 7 feet? A. I suppose so.

Q. Well, isn't that a fact? A. I have no way of knowing the reason why they did it.

Q. You simply know they did do it? A. Yes; I have seen them go, I have seen them do it, and I knew they did it, and the reasons they had for it I didn't know." (See pp. 190 and 191).

On pages 190, 193, 194, 195, 196, 197, 198, 199 and 200, he reiterates and explains his great familiarity with the waters in these channels. There could be no question from the testimony of Mr. Swenson, who was a man of standing, integrity and a life-long citizen of Duluth and who had been a County Commissioner of the County of St. Louis for a number of years, that the main channel of commerce prior to Government dredging was the channel G-B on Minnesota's Exhibit 3.

DARWIN E. STEVENS.

Another witness to whose testimony we now call attention is that of Captain D. E. Stevens, who had been a resident of Duluth for 48 years at the time the testimony was taken, having lived in the city since childhood. His testimony is found on page 210 et seq of the Record. He was a member of the Duluth School Board for nine years and was a man who had taken a prominent part in the financial, political, business, and social life of the City of Duluth. He commenced working on the St. Louis Bays and River when he was twelve years old, hauling wood from "Huegier" (Big) Island and upper St. Louis Bay to Duluth (see p. 211). In 1885 he got his pilot's papers and bought a half interest in a tug. He says from that time on he was navigating the river regularly right along for years (See p. 211).

He testified with reference to the "main, navigable and navigated channel" in the upper St. Louis Bay as follows:

"Q. Mouth is a big thing sometimes. Calling your attention to Minnesota's Exhibit 3, I will ask you, in passing Grassy Point going up towards Fond du Lac what was the main navigated and navigable channel from that point up? A. From A?

Q. Yes, from starting point marked A, Grassy Point, what was the main navigated and navigable channel or course? A. What is this, D?

Q. Yes. A. After we get to the sound end of Grassy Point then followed that red line from A to B and B to D through the cut-off, was the main navigated channel.

Q. And the course usually taken by all kinds of traffic? Yes, sir.

Q. Was there another channel to the south of that anywhere? A. Several channels south.

Q. Several channels south of it? A. Yes.

Q. How many? A. There are two channels. One was a flat." (See p. 212).

He testified again:

"Q. Now calling your attention to this curved whitish line that is marked H, did you use that in navigating that unless you were going to Milford? A. No, sir, never used that without we had some business up that way.

Q. You say you never used that unless you had some business up that way? A. No, sir, never used it.

Q. You say 'we'; do you mean by that that it was not —that traffic generally did not use it? A. I never used it.

Q. Did you know of its being used except for that purpose, that is where there was business up there at Mil-

ford or up in that direction? A. No, I don't remember." (See p. 213).

The cross-examination of Captain Stevens did not in any way disturb the testimony that he gave on direct examination. There was no doubt, if his testimony was true, that the Milford channel was used only for the purpose of getting material out of Milford Bay, and that the "main, navigable and navigated channel" during all the time prior to the dredging by the United States Government was the channel G to B on Minnesota's Exhibit 3. On his cross-examination, he emphasizes his evidence given on direct with reference to the use of the Milford channel running into Milford slough (See pp. 216, 217).

C. W. McMANUS.

We next call attention to the testimony of the witness McManus, who came to the head of the lakes in 1863, and was three years old at the time he came. He has lived at the head of the lakes ever since. In his early life he was in the tug business and commenced to sail the waters of Lake Superior and its bays at the head of the lake in the year 1871. He says he was a boy aboard the Agate, passing wood, tending line, and looking after the scows to start with (See p. 225). He worked for the owners of this boat doing such work for a period of seven years (See p. 225). Afterwards he sailed on the John A. Page, Molly Spencer, Amethyst, and Frank C. Fero, and continued sailing these waters for fifteen or sixteen years (See p. 226). After giving up the tug business he purchased a little steamboat of his own as a pleasure boat and has kept it ever since, which has plied in these waters. He testified as to his familiarity with these waters and the bays in question and the class of work that he did there.

He testified without using the map that the channel of commerce and usually traveled route from Grassy Point to Big Island, whether they went north of Big Island or south of Big Island, was the route which is marked on Minnesota's Exhibit 3 as G-B. His testimony on this point is found on pages 227 and 228. His cross-examination did not in any way shake his testimony as to the channel of commerce.

ALEXANDER McDOUGALL.

The next witness we call attention to is Captain Alexander McDougall, who has been a resident of the City of Duluth since the year 1871 and who made his first trip to Duluth up the lakes in 1868. His vessel landed the first people here in 1868 (see p. 233). He testified:

> "Q. And were you navigating the lakes at that time when you first came to Superior entry? A. Yes, sir.
>
> Q. In what capacity? A. I was second mate of the steamer Iron City; I was for a while on the Iron City and for a while on the Ironside; one of those two steamers.
>
> Q. Did you, between 1863 and 1868, sail up and down the lakes? A. Yes, sir.
>
> Q. How old were you in 1863? A. I was 18, March 17th." (See p. 233).

He then testified:

> Q. And since that time, in a general way, what has been your business? A. Up until 1881 I sailed on this lake and to this head of the lakes.
>
> Q. And since then what? A. I have been connected

with building and operating vessels, stevedoring and frogging around the head of the lakes." (See p. 234).

He then testified to his inventing the "whalebacks" and his being engaged in the ship building business at Superior and was at the time of the trial engaged in one of the largest ship building enterprises for the Government on the Great Lakes. His evidence shows that he is a man of wide business experience, a distinguished citizen at the head of the lakes, a man of wealth, of integrity, and of great influence, and his familiarity with the waters in question was detailed by him and left no doubt as to his familiarity with the situation.

He testified:

"Q. I will ask you what the course of navigation was from just below Grassy Point upwards towards Fond du Lac, that is, the main navigated and navigable channel; what was it? A. Let me have your pencil and I will show you what I knew to be the place, and what we did; down in through here and past in south of the island and into the river here. (Indicating).

Q. The course you have marked is approximately along the line A-E-G-B-D, and then up the channel south of the island? A. Yes, sir.

Q. Now, was there a navigable channel right next to Grassy Point here, on this curved right line which is marked H at one point? A. Where do you mean?

Q. I say was there along there. A. A channel?
Q. Yes. A. Not that I know.

Q. What was the character of the water there? A. The character of that whole bay was such that a man could wade on that pretty nearly from any place up on the river here, through that whole country. There were no boats here that drew more than three or four feet of water in those days.

Q. What is the fact with reference to the width of the waters from main shore to main shore at, say, a point just easterly of Big Island? A. About a mile wide. I can see it on there and know what it is; from my knowledge of charts I can see it is about a mile wide, and I have had that impression." (See p. 236).

There could be no doubt in the mind of Captain McDougall that the channel G-B was the channel of commerce before Government dredging was done. Captain McDougall explained the tides and the formation of lands and the shores which have been discussed in another part of this Brief, and his testimony was very intelligent and illuminating, and we ask the Court's careful consideration of it. His cross-examination left no doubt as to the accuracy of his testimony in chief.

FRANK A. BREWER.

We next call attention to the testimony of Mr. Frank A. Brewer, another of the most substantial citizens of the City of Duluth. He had lived in Duluth since the year 1880 and was a member of the Duncan & Brewer Lumber Company firm, and at the time he testified he was the President of the Board of Education of the City of Duluth and had been for a number of years, and also President of the Duluth Crushed Stone Company, and had been a manufacturer of lumber in a large way for many years They had brought down a great many logs to their saw mill in Duluth from the waters of upper and lower St Louis Bay, and he was very familiar with the channels, it being his business to see to the getting of the logs for the mill He traveled on the tugs that were towing the logs a great deal of the time and even stood at the wheel and navigated the tug a part of the time. His testimony is found at page 259 et seq of the Record.

He was asked specifically concerning the "navigated and navigable channel" above Grassy Point and testified as follows:

"A. The course that was usually followed by boats from about south of Grassy Point; there were two channels there that they usually followed; they usually followed this channel here, or very close to that; that was the one that was more in common use.

Q. The one you have pointed to is substantially the red line marked A-E-G-B-D, is it? A. Yes, sir.

Q. And then on up southerly of Big Island? A. Southerly of Big Island.

Q. And what was the other channel that you say was sometimes followed? A. What we knew as the north channel was from this letter B and C through very close to this channel here.

Q. That is, you mean, on the red line from B to C? A. Very close to that red line as nearly as I can remember it.

Q. And then on up north of Big Island? A. Yes, sir.

Q. *Now would the course used twist around in here just westerly of Grassy Point on a line marked H, except when people were going to Milford or to some point on that line?* A. *I never saw it used.*

Q. *You never saw it used?* A. *No, sir.*

Q. Do you know whether there was a shoal place or bar at the westerly end of that light-colored line marked H, shallow water? A. I know that we had logs frequently in this upper bay here and the lower bay, right in there (indicating); we had logs in those two bays there.

Q. The one that you are referring to is the bay marked 'City Slip—Est. 1909', and the one just westerly of that and the one just easterly of that first? A. Yes, sir. And I know that in getting logs out of these bays we came out and used this same channel coming down through here (indicating).

Q. That is, you refer to the channel marked C-B-G-E-A? A. Yes, sir." (See p. 261).

The testimony of Mr. Brewer is without equivocation of any kind and there is no possible doubt as to where the "navigated, navigable channel" was, if Mr. Brewer's testimony is to be believed. On cross-examination he went into great detail that showed his testimony to be very accurate and his knowledge of the situation very extended. On cross-examination he was asked:

"Q. How often did you go up the river on boats? A. Very frequently.

Q. What boat did you go up on? A. Many different ones.

Q. What different ones? A. I couldn't tell the names of them. I can tell some of them.

Q. What ones do you remember? A. I remember the Agate and the Barrett. The Barrett was among the later ones, and the Carroll, I think ,was one, the Spirit, the Nelly Cotton, and there was others I can't remember.

Q. How much water did they draw? A. As I remember, from five to seven feet, seven and a half, possibly.

Q. Did you usually navigate the cut-off channel around Big Island or the northerly channel? A. For small rafts we navigated around the island; larger rafts came down on the north side of the island." (See p. 265).

If his testimony is to be believed, the channel G-B was the "main, navigated and navigable channel", whether traffic went north of the Island or south of it.

Mr. Brewer was recalled, and his testimony on recall is found at page 938 of the Record, and the reason for recalling him was the fact that a pilot by the name of Shea had testified

for the State of Wisconsin, and while he was thoroughly mixed on his testimony and it was hard to get head or tail therefrom, yet he testified that Mr. Brewer was with him in many trips hauling logs and that they practically always went down the Milford channel. That he was mistaken ,his own testimony, it seems to us, demonstrates; but we called Mr. Brewer on that matter. Shea referred especially to the tug Rambler. Mr. Brewer's recollection was very distinct with reference to that tug and what she did. He testified:

"A. The Rambler was asked to go after some logs for us above that point and I was asked to go with them and help locate the channel up there, and we undertook to go up what is known as the deeper channel on the inside there and I remember the captain of the Rambler, Mr. Shea at that time was a wheelsman, and in along what is known as Kimball's Point, I think, of that bay, we got aground and we spent the larger part of an afternoon trying to locate, after we got off of the bottom, trying to locate a hole through there to get back into the channel that was commonly in use, and we couldn't make it. We had to give it up, and the Rambler returned without bringing any rafts or logs, and in fact she never did tow any logs from above this point, for us.

Q. Is this point that you refer to about the point of that bar across that chanel there? A. Yes, sir. I remember at the time they were there the Captain had the Government chart, what is known as Government chart, and we were following the channel, and we had to get out and sound it, and after we were aground we sounded around there and we weren't able to find any channel that that Rambler could go out into the channel that was commonly in use. The channel that was commonly in use was—tugs drawing around 7 feet could use that, and that was the one in towing the logs there. We towed for many years there and that was the one that was in use, the straight channel.

Q. And did the Rambler ever go up beyond that point? A. Not to my knowledge. I know at this time we had a

strong northeaster on and we thought we could make it with the Rambler with these logs, and she wasn't able to make it." (See p. 939).

The Record shows that the testimony of Mr. Brewer was given in answer to a specific question with reference to the one time they tried to navigate the Milford channel when Shea was with him, and was as follows:

"Q. Do you remember Captain Shea doing work with your tugs up there and picking up logs? A. Yes, sir.

Q. What work did he do and with what boats? A. He worked with a smaller tug and he towed logs there different years for us with a smaller tug. It was after this. At that time I am quite certain when Shea was on the Rambler he had pilot's papers and not captain's papers. He afterwards, I think it was the next year, I think the second year after that he had a smaller tug and he worked for us for three or four years at different times.

Q. This small tug had a draft of what? A. Around 6 feet.

Q. And was it with that tug that he did the principal work of picking up logs? A. Yes, sir.

Q. And were these logs being picked up for several years after they broke and came down? A. The logs from Cloquet, they were about a year and a half picking those up. Captain Shea towed other rafts for us. We had a certain mark on those logs that came down from Cloquet in that break, coming down from the Cloquet Lumber Company.

Q. Were you often on tugs while Captain Shea was working for you? A. Yes, sir.

Q. Now what course was usually taken when you were on the tugs with Captain Shea? Calling your attention now, to Minnesota's Exhibit 1, that is, did you take the

course marked A-E-G-B-C or did you go around in the course marked H here (indicating)? A. This is the course we used (indicating).

Q. When you were on the boat— A. Or so close to it—

Q. Of course that is only supposed to be approximate. Did Captain Shea ever, to your knowledge, take this course H in doing work for you, that is, around here (indicating)? A. I think that the only time Captain Shea ever used that while he was in our employ was when we had some logs we took out of this bay.

Q. You are talking of a bay up a little east of Milford? A. Yes, sir.

Q. Then you say the only time that he used that course was when you had logs in that point or near it? A. Yes, sir." (See p. 940).

On cross-examination Mr. Brewer testified:

"Q. Now it is your explanation that the larger boats avoided this channel marked H there; is that right? A. There was no larger draft boats went up there to my knowledge.

Q. You said the Rambler was too deep a draft boat to run in that channel H? A. Coming up to a certain point; run up to the upper end of it, and there was a shallow spot at the upper end that was no deeper than this channel here (indicating—referring to the channel marked G-B on defendant's Exhibit 3).

Q. It was as deep, wasn't it? A. It was as deep. It was deeper the larger part of the distance but the upper end was no deeper than this.

Q. It was as deep at the uper end as that? A. Yes.

Q. It was as deep at the shallowest place as the channel that you indicate, C-B? A. Yes, sir.

Q. That's true, isn't it? A. Yes, sir.

Q. But no deeper, you say? A. At the upper end it was no deeper.

Q. But it was as deep at the shallowest place? A. That is the way we find the soundings." (p. 941).

On his cross-examination he further showed that he was with Captain Shea as a usual thing when the captain was "wheeling" his tug and hauling logs for the Duncan Brewer Company:

Q. Were you with him when he went up for you, always? A. Not always.

Q. You weren't generally with him, were you? A. I was generally with him when he was towing logs for us." (See p. 942).

JOHN H. NORTON.

We now call attention to the testimony of John H. Norton, a prominent lawyer of the city of Duluth, who had held the office of prosecuting attorney of St. Louis County for four years and who in his early life as a young man sailed on the Great Lakes, including the head of Lake Superior, for ten years, having quit before any dredging was done by the Government above Grassy Point. His testimony is found at page 273. His evidence shows him to be a man of inteligence and a man of the highest standing so far as integrity is concerned. He testified to his experience on the disputed waters in question during the sailing season of 1891:

"Q. Where did you navigate that tug? A. Around the Duluth-Superior harbor and around the St. Louis River and Bay.

Q. Have you since you have become a lawyer given a good deal of attention to marine matters? A. Made a specialty of that.

Q. At that time, when you were navigating these waters with a tug, had the Government channel been dredged out above Grassy Point? A. No.

Q. It had not been above Grassy Point? A. I don't think it had.

Q. Calling your attention to Minnesota's Exhibit 3, I will ask you to state when you were navigating and when you reached the lower end of Grassy Point, what course you took and what course the navigation generally took from there up towards Fond du Lac? A. Well, after we passed through the railroad bridge at Grassy Point, through by the old Huntress and Brown mill we kept right on up, and hugged the Wisconsin side until we got abreast of the clay banks and then we held her to the Minnesota side and went right along where this red line indicates between—is that B?

Q. No; that is G there (indicating). A. Between G and B. And passed to the right side of this little island, it has a name but I have just forgotten it now, and then the channel followed right along around with the curve of the shore until we got up Spirit Lake, and when we got at the head of Big Island we got into the river proper, and then we just followed the stream right on up.

Q. Now, is the course that you took from the southerly point of Grassy Point substantially on the red line marked A-E-G-B-C? A. It was.

Q. And from there on up north of Big Island? A. Yes, sir.

Q. And did you also at times go south of Big Island? A. This is Big Island?

Q. Yes. A. Yes." (See p. 274).

Again he was asked concerning the "Millford" channel:

"Q. Did you ever take the course on this light shaded line or curve which is marked H in red? A. I did not.

Q. Do you know whether at the westerly end of that line that I have just called your attention to, marked H, there was a shoal or bar? A. That was all shoal water.

Q. Ever get stuck there? A. I did. I was coming down with a scow loaded with wood one night and it got dark when I was abreast of Ironton over here, and when I got around up to the point to haul up I couldn't see the clay banks. There was no channel there so far as Government buoys were concerned, no stake, and I got over there to the eastward of the channel and got hard aground and lay there till noon next day before a tug came along and pulled me off.

Q. Was the water deeper in the line marked B-C than it was at this point you have indicated just easterly of C? A. It was.

Q. And the main navigated and navigable channel was substantially on the line A-G-B-C?

Attorney-General Owen: Objected to as calling for a conclusion of the witness.

A. Yes." (See p. 275).

We desire to say here and now that with the channel running practically straight from Grassy Point to Big Island over the line marked G-B on Minnesota's Exhibit 3 and with water concededly as deep all through the channel or route as the shallow parts of the so-called "Millford" channel, we would like to ask this Court what reason there could be for the navigation of commerce to take the tortuous route around "Millford" channel hugging the Minnesota shore, when they could just as well and with much greater safety take the straight and shorter channel? It seems to us that the reason for taking the channel G-B standing as it does in this case coupled with the testimony and demonstrated results establishes that the "main, navigated and navigable channel" was the channel G-B on Minnesota's Exhibit 3.

But this is not all the evidence on this point. When the State of Minnesota was putting in its main case there were sev-

eral witnesses who were not available at the exact time that we desired to call them, and we therefore reserved the right to put in additional evidence when a later session for the taking of evidence was held.

MARTIN WHEELER.

We therefore called a witness that we consider as important as any in the case, owing to the exactness of his knowledge, the length of time that he worked in this vicinity, and the general integrity and candor of his character and testimony. We refer to Captain Martin Wheeler. His testimony is found at page 948. At the time of the trial he resided in Washington, D. C. He was 68 years of age and came to Duluth in the fall of 1855 when he was six years old and navigated the waters of these bays at the head of Lake Superior continuously from 1868 to 1881 (See p. 949) :

"Q. What were you doing, master or wheelsman or what? A. First I was engineer and then after that I was master.

Q. What boats or tugs did you operate principally? A. The first one I was in was the Agate and the next was the Amethyst.

Q. What others did you run? A. Just those two during that time. I owned the Amethyst or owned an interest.

Q. Both of those were tugs? A. Yes, sir.

Q. And what business were the tugs engaged in principally? A. Principally towing scows and booms of logs. Of course, there was towing along with it. Once in a while a barge or vessel, but it was principally logs and scows.

Q. And was a very considerable part of your time during these 13 years engaged in operating between Duluth and up to, say Fond du Lac? A. Yes, a large part of it.

Q. You did a good share of the log towing, I take it, up there? A. Yes, sir.

Q. And you mentioned scows too. Were you hauling scows that had rock on them, stone? A. Yes, sir.

Q. Any other materials? A. Wood, hay, lumber sometimes, brown stone.

Q. Where was that hauled from to, what point? A. The first few years from Fond du Lac to the Superior entry for the Government piers.

Q. You say from Fond du Lac? A. Yes, sir.

Q. There were stone quarries in Fond du Lac in those days? A. In the early days.

Q. Were you engaged with others who were navigating those waters, in a commercial way, during that time? A. Yes, sir.

Q. Was Alfred Merritt largely engaged in navigating those waters, in a commercial way, during that time? A. He was master and I was engineer on the first tug at the Head of the Lake here in '68.

Q. And was Jack Jeffry, Captain Jack Jeffry, navigating these waters during a considerable part of that time? A. He started in '69. I went as master of the Amethyst and he was with me that season, and the next season; he was with me for several years as engineer and then went as master on the Nellie Cotton.

Q. Do you know whether he was there navigating down to 1881 and possibly after that time? A. Yes, sir.

Q. You knew Ben Howard and John Howard, did you? A. Yes, sir.

Q. Now outside of those four that I have named, and yourself, that is Alfred Marritt and Jack Jeffry and the two Howards, was there anybody who navigated those waters in

those days in a commercial way to any considerable extent? A. There was one or two more, but I don't think they are living. Captain Lutz used to run up there a good deal. He was in the Agate after we got it.

Q. Were there any others that are living that you know than those four and yourself? A. I don't think of any that made a business of running up the river.

Q. You just came on from Washington, D. C., did you not? A. Yes, sir.

Q. Did you visit Captain Jeffry at the hospital yesterday? A. Yes, I saw him yesterday.

Q. He has been quite ill, has he not? A. Yes, sir.

Q. Now, during those years from '60 to 1881 were there any boats that navigated these waters, we will say above Grassy Point, that drew more than seven or eight feet of water? A. Not that I know of.

Q. What was the deepest draft that you knew of in those days going up above Grassy Point? A. I didn't understand the question.

Q. I say, what was the deepest draft of any boat that you know of in those days that went up above Grassy Point? A. Eight feet.

Q. Eight feet was the deepest? A. Yes, sir.

Q. And, as a matter of fact, down in what is known as the lower bay was that as great a draft as could get through there? A. Eight feet was what we considered all a person could get through St. Louis Bay." (See pp. 949, 950).

His attention was then called to Minnesota's Exhibit 1 and he testified:

"A. Well, here is the river coming down here and here is Grassy Point. We used to come up through the bay, then follow this water here (indicating). This is a channel that wan't used very much (indicating).

Q. You are pointing now to the line marked A-E and crossing to the west around to F, aren't you, that you say wasn't used very much? A. Very seldom. There was a channel up there. The course we usually took when we were going up the river to Fond du Lac we would come up here opposite this corner of the point; used to be a big clay bank in here, and then we used to have a little island here. This is it here, I think.

Q. That is called Snowshoe or Snowpack or Pancake Island? A. I don't know what it is called. I never heard any name for it. We followed about the course marked here (indicating) to this line up here.

Q. You pointed now from A to G to B? A. Yes.

Q. What course did you take from B on? A. In going up to Fond du Lac we used to generally take this here what is called the cut-off.

Q. That is the line B-D and then on? A. Yes. Going into this channel and through here.

Q. And south or east of Big Island. A. It is the way we generally went in doing our towing to Fond du Lac, and if we had anything over in here we used to take this other channel over here (indicating).

Q. What channel do you mean? A. It would be this one to the right of this island. The dividing point would be about here. Is that B?

Q. Yes. A. That's about where, if they were going to the north of the island, we would go around this way.

Q. *That is, if you were going to the north of the island you would go along the line B-C or substantially that?* A. *Yes, about that. If we were going to Fond du Lac generally took what you call the cut-off channel.*

Q. And you say that the most of the traffic was through the cut-off? A. Yes, sir.

Q. In those days. Now when, if ever, did you go along the channel or white line in the center of which is the letter H—was that used? A. If we had any towing to do that

would originate in this bay, or if we wanted to go into Millford, we generally took this channel. Millford was located in there (indicating).

Q. You say this bay— A. Used to be logs in these sometimes.

Q. In order to get it on to the record, what bay do you refer to? Can you give it any name? A. No name for it.

Q. Was it then the bay that you are pointing to, just a little west of the point marked H on the map? A. Here was the point (indicating). It was about that shape. Grassy Point is only that wide (indicating).

Q. Does that fairly describe it, a bay a little west on the map, of the point marked H? A. That would be all right. Well, it would be more—

Q. I assume this is north and south? A. Yes; that's about right; that would be about west.

Q. You say you took that channel or that line when you were going in to either that bay or to Milford? A. Yes, sir.

Q. *But otherwise if you were going up the river up to Fond du Lac you would take the line A-G-B-C, that is, if you were going north of the Big Island?* A. *Yes.*

Q. *And that line A-G-B-C, was that the line usually taken by traffic in those early days?* A. *Going on this side of the island?*

Q. *Yes, going on the north side of the island?* A. *Yes.*

Q. And that was the line usually taken except when people were going through the cut-off; is that right? A. Yes, sir.

Q. *And does what you say as to the line of traffic apply as well to the traffic conducted by others, as yourself?* A. *As far as I know.*

Q. *That was the customary course of travel?* A. *That was the custom of the tugs that were running at that time.*

Q. Can you give us some idea as to how many times as much commercial traffic went along the line A-G to B, we will say, as would go up the line or channel marked H, in those days? A. *I should say at least nine-tenths of it went this way.*

Q. *Nine-tenths of it went along the line A-G-B?* A. *Yes, sir.*

Q. *And what went up the channel, so-called, marked H, was just what went up to the bay or went up to Millford?* A. *Very little went that way.*" (See pp. 951, 952, 953).

We called attention once before to the testimony of John Ojibway, a half-breed Indian who testified that he worked as a roustabout on the scows hauling rock for several seasons where Captain Wheeler and Captain Alfred Merritt were captains on the tugs towing such scows, and he also testified for the State of Wisconsin that they universally came down the "Millford" channel. While naming Captain Wheeler as the captain of the tug and stating that he, Wheeler, would know where he went and that the latter was a competent navigator, yet the half breed did not know that Captain Wheeler was to be a witness. We do not suggest that the poor half-breed was testifying falsely deliberately, but we do think that the evidence demonstrates that he was terribly mistaken. Captain Wheeler's attention was called to the testimony of this half-breed, and the following took place:

"Q. Now do you remember a man, I think he is a half breed, I think the evidence shows, called John Ojibway? A. We used to call him John Chippeway.

Q. Did he work for you at any time, work on the scow that you were hauling? A. Worked on scows; I don't think he was directly in my employ.

Q. Did you haul scows that he was working on? A. Yes, sir.

Q. Hauling stone? A. Yes, sir. Wood too, I think; I wouldn't be positive.

Q. First I will ask you this: Would the same course be followed coming down the stream as going up? A. Yes, sir.

Q. And during that time, in hauling scows in which he was working did you take this course that you have indicated? A. Yes, sir.

Q. *Didn't go around in this channel, so-called, marked H, except when you were going up to Millford or—* A. *No. I don't ever remember taking stone around that way.*

Q. Now, was the water as deep, that is the continuous depth of water as great, in this channel marked A-G-B-C, as it was in this half moon circle marked H; I say the continuous depth? A. Just ask that again.

Q. I say, was the continuous depth as great in the line marked A-G-B-C, which you usually took, as it was in the half moon line marked H? A. I couldn't say as to that. According to the chart, it is deeper this way. I never sounded the channel as long as I had plenty of water going this way.

Q. So far as you knew, was it as deep in this line A-G-B-C as it was around the other way? A. As I said before, I never sounded the channel, so I couldn't say. All I could go by is what I see here on the chart.

Q. *Did you ever have any trouble in going up the line A-G-B-C with this craft that you were using in those days?* A. *No, there was plenty of water for us.*

Q. *You think, then, if Mr. Chippeway or Ojibway said that you towed him down in these scows with rock along this half moon line H he is mistaken, do you?* A. *Yes, sir.*

Q. You don't remember of ever going there? A. Not that I know of.

Q. Now was the channel in the mark A, G, B, C, was that much wider than this one marked H, I mean wider ex-

panse between the reeds? A. *Yes; yes, it was some wider.*

Q. *And of course saved distance too?* A. *It was quite a little shorter from Grassy Point to Fond du Lac by taking what we called the cut-off, taking this channel here."* (See pp. 953, 954).

The testimony of this witness is unequivocal and given by a man thoroughly familiar with that locality before Government dredging was done. His cross-examination was additional proof of his integrity, accuracy, and the soundness of his memory. His cross-examination is found from pages 954 to 960. Especially do we call attention to the fact that if the testimony of Captain Wheeler is correct there could be no possible advantage in boats taking the "Millford" channel in navigating the waters in question when they had a better channel running almost in a straight line and a much shorter distance.

H. G. INMAN.

We now call attention to the testimony of another boat captain, being Captain H. G. Inman. His testimony is found on page 962 et seq. Captain Inman testified that he lived in Duluth 32 years. He had been connected with the shipping at the head of the lakes and was now with the Union Towing and Wrecking Company, which conducted a vessel towing business exclusively at the head of the lakes. He had been with this organization since 1899 (See p. 962). A witness for Wisconsin by the name of Berg, who was a grocery clerk and had been a grocery clerk for many years, testified that a boat called the Ossifrage drawing about twelve or thirteen feet of water (and to whose testimony we will refer again a little later on) went up westerly of Grassy Point over the disputed waters in the year 1878, and that this boat went up over these waters frequently. This was 15 years

prior to the time that any dredging was done. After Captain Inman had testified that he held a master's license on the Great Lakes continuously for thirty-two years and still held one and had sailed boats over these waters in question for a long time, he was asked concerning the steamer Ossifrage and the testimony of this grocery clerk:

"Q. There has been a man testified for the State of Wisconsin, by the name of Berg, and I am not sure but other witnesses testified, but this man testified that in '78 he went up the St. Louis Bay, went up as far as Fond du Lac on the Ossifrage, is that true? A. The man is mistaken.

Q. Did the Ossifrage ever go up as far as Fond du Lac or above Grassy Point during '88 or '89, when she was here? A. She did not.

Q. Could she go up? A. No, sir.

Q. Prior to the time the dredging was done in 1893 it would be impossible to take that boat— A. Yes, we considered it so.

Q. Did you know where your boats were all the time? A. Yes, sir.

Q. It was part of your business? A. Part of my business.

Q. Then what became of the Ossifrage in '89, what did you do with her? A. Let her go back to her former owners.

Q. Whereabouts? A. Bay City.

Q. Did she come back to the head of the lakes? A. She came back to the head of the lakes the year of the world's fair at Chicago.

Q. In 1892—or 1893? A. I don't remember just what year that was, but the Smith-Fee Company bought her." (See pp. 963, 964).

It will be seen from this testimony that the man Berg, while he contradicted himself repeatedly and his testimony became greatly confused, was shown to be absolutely mistaken by the testimony of Captain Inman. This boat never went up westerly of Grassy Point and could not go in these waters until after the year 1893 when the government dredging was done.

Captain Inman then testified that the route of travel from Grassy Point to Big Island was substantially the route marked G-B on Minnesota's Exhibit 3, and then he testified with reference to the "Millford" channel:

> "Q. Now, then, do you recognize this body of water that's in here marked H, sometimes called the Millford channel and sometimes been called the main channel by the Wisconsin people; I will ask you if you ever went up that channel, went around here, when you went up there? A. No, sir, I didn't. I never knew anything about it." (See p. 966).

Again, he was asked:

> "Q. Do you know whether other boats took this same channel that you took, from A to G and from G to B and B to C, and if they went the short-cut, from B to D? A. There weren't so very many boats, but that was the way pilots taught me to take.
>
> Q. Did you ever in all of your experience take this channel H? A. No, sir, I did not, in those days." (See p. 966).

Captain Inman is another witness whose evidence shows that he was a man of the highest integrity and character and his knowledge was accurate, of the conditions, to which he testified.

GEORGE LLOYD.

We now call attention to the testimony of Captain Lloyd. His testimony is found at page 967 of the Record. He had sailed vessels for twenty-eight or nine years, since he was twenty-one years old. (See p. 967). In the year 1885 and after he hauled logs from Fond du Lac; that was about the second or third year after he had his license. (See p. 968). He was therefore very familiar with these waters in question before the Government dredging was done in 1893. He was then asked what channel they used in navigating these waters westerly of Grassy Point and testified as follows:

"Q. What channel did you take when you went up there, Mr. Lloyd? A. Come down here (indicating) and went around here (indicating); took a circle here and went up here.

Q. That is, when you say 'here' now, you pointed at the channel A, G, to B? A. Yes. That is the channel from the bridge down.

Q. I don't care anything about that. You got up as far as B. I just want to get it on the record. A. Well, there was generally a lot of weeds there (indicating).

Q. At the point of the island? A. Yes, sir, at the junction.

Q. You called that the junction? A. This is the short-cut.

Q. That is the line from B to D, if you were on the cut-off? A. Yes, sir.

Q. Then when you went north of the island which route did you take? A. Right around here (indicating).

Q. That would be B to C? A. B to C.

Q. *Now did you ever use the channel H, being the*

channel that went up to Millford, that is when you went clear up the bay? A. *No, sir.*

Q. Did you ever know of that channel H being used by other boats at that time? A. No, sir.

Q. Now what other boats did you sail on, what other tugs did you sail on in towing logs and hauling rock prior to 1893? A. You mean besides the Martini?

Q. Yes. The Martini was an excursion boat? A. Yes, sir. The Agate and the Tourist.

Q. What about the McKay? A. McKay and Agate are both the same; changed the names, is all.

Q. What did you do on the McKay and the Agate? A. I was lining, wheeling." (See pp. 968, 969).

The cross-examination of Captain Lloyd is found from pages 970 to 975, and there was nothing in his entire cross-examination that was not in harmony with his testimony in chief.

JOHN JEFFRY.

The last witness for the State that we call the Court's attention to was the testimony of Captain Jeffry found at page 993 of the Record. This was taken by deposition at the hospital where the captain was recovering from an operation. He testified that he came to Duluth in 1869, and that he followed the water (sailing) all his business life, commenced following the water in 1870. He had sailed with Martin Wheeler as engineer and later became master of a vessel himself.

He testified about his sailing these waters:

"Q. From '70 to '90 did you go up the river a great deal? A. All hours of the day and all hours of the night.

Q. Are you familiar with all the channels up there? A. Yes, sir. I could use to go up any hour of the night. Didn't care how dark it was.

Q. Are you familiar with the Millford channel too, been in there to get logs and so forth? A. Yes, sir, slabs, wheel slabs, and tow down scow for fuel; took it down to Superior on an old dock we had down there.

Q. From Desimval's little mill? A. Yes, Desimval's mill, we called it.

Q. I am going to ask you to look at Minnesota's Exhibit 1. Here is Grassy Point? A. Yes, sir.

Q. Here is the Milford channel. Take this line from A to G, and G to B, and B to C, and then from B to D, and here is Big Island? A. Yes.

Q. Now what channel did your boat take? A. I generally ran after I rounded the end of Grassy Point, we called that the Devil's Elbow, that's really the name of it.

Q. Did they ever move it further up the stream later? A. Some does. Some call it the Devil's Elbow.

Q. After you got around Grassy Point— A. We turned that and I would go right across—Where is that little island, part of it dredged away now?

Q. Between B and C and B and D. It was right in there. A. We used to strike right across. There was a point of rushes circled down there something like that (indicating), and we circled just to clear that point. In the spring we couldn't see them rushes and then we had to look out for that point.

Q. If you wanted to go the cut-off you would go which side of the little island? A. I would go on the south side. If I wanted to go up river I would go on the north side.

Q. About how many feet from the island? A. Pretty close to it either way.

Q. *Is that the route that all of the boats took in the early days?* A. *Yes.*

Q. Before the deep channel was dredged so that they could get down there with the scows of lumber? A. Yes, we took that way unless something called us—I have taken logs out from what we called Keene's Creek, and that's straight in at the base of Grassy Point in on the land. You might say come out in that point, the creek does.

Q. There was a witness testified, young Desimval, that from '88 on down that he logged there for several winters and towed out rafts, about 10 million feet, and that you did all the towing, and he said that you alwa[illegible] brought his rafts and all his logs in around by Millford instead of going around this channel you speak of? A. *Not unless he had them in to Millford and wanted them pulled out of there.*

Q. He is mistaken about that? A. He is mistaken about that unless he had put some logs down off the hilltop, which the old man Desimval did drop some down where the Duluth Heights used to come out, just west of that he let them down with a line for his own little mill. Whether the young fellow ever logged down there I don't know. Did he say what mill I delivered them at?

Q. Yes, I think he said Peyton, Kimball & Barber? A. I don't know where young Desimval is now. He used to live upper town in Superior, down near where the old brewery used to be." (See pp. 994, 995).

There was no doubt whatever about the "main, navigated and navigable channel" so far as the testimony of Captain Jeffry was concerned. While physically weak, his mind was clear and accurate and his testimony leaves no room for doubt that the channel claimed by Minnesota was the "main, navigable and navigated channel" of commerce, and he expressly testified that young Desimval was mistaken when he testified that Jeffry towed logs down from above Big Island through the "Millford" channel. In fact, Captain Jeffry says that he never came down that way with a raft of logs. His cross-examination accentuated

the fact that Captain Jeffry was thoroughly familiar with all those waters; had sailed them continuously for years and years; and that there was no doubt of any nature or description in his mind that the "main, navigable and navigated channel" in the disputed waters in question was the channel G-B on Minnesota's Exhibit 3. His cross-examination is found on pages 995 to 1001, both inclusive.

We have now called the Court's attention as briefly as we think advisable to the testimony of the State of Minnesota establishing the "main, navigable and navigated channel" from westerly of Grassy Point to Big Island prior to the time that Government dredging was done in the year 1893, and we contend that not only does the evidence establish that the "main, navigated and navigable channel" in the disputed waters was the channel marked G-B on Minnesota's Exhibit 3, but that the very charts and maps showing the soundings must be a demonstration that for the boats that could use these waters up until Government dredging was done there could be no possible reason for using a channel having deeper water than the said channel marked G-B as aforesaid. The state line of Wisconsin was established in 1846 and the state line of Minnesota was established in 1858. The fact that dredging was done at a later date could not change the state line.

From the time the Bayfield map was made in 1825 down until dredging was done by the Government in 1893, undoubtedly the channel of commerce in the disputed waters was the channel G-B. Bayfield apparently did not even consider the "Millford" channel at the time he made his survey. His channel or "track survey", as he called it, went substantially over our line G-B, and above that point took the "short-cut" to the south of Big Island.

In all probability, if Minnesota had insisted upon the matter early enough, it would have had no trouble in establishing the state line to the south of Big Island through the route known as the "short-cut", but the discussion of that question is not here material, as both states have acquiesced for many years in conceding that Big Island is in the State of Wisconsin.

We believe that the evidence of the State of Minnesota is conclusive that the "main, navigated and navigable channel" between Grassy Point and Big Island is, as we contend.

We secured the testimony of practically every living captain and pilot who navigated these waters in the early days, besides many others who lived along these shores and were familiar during all this time with these waters. If the testimony produced by the State of Minnesota is true, not only is the state line far to the south of the dock properties in question which Wisconsin is endeavoring to lay its hands on, so to speak, and in justice and equity there is no reason that can be conceived or suggested so far as we know why the State of Wisconsin should be allowed to claim any land annexed to the Minnesota shore and thus cut off these valuable improvements, *whether we consider that it is for the benefit of Wisconsin as a State for the purpose of taxation, or to enrich the citizens and owners of Wisconsin shores by acquiring title to the greater parts of these docks so cut off.*

TESTIMONY OF WITNESSES FOR WISCONSIN.

We now come to the consideration of the testimony produced by the State of Wisconsin trying to establish that the

"Millford" channel was the "main, navigable and navigated channel" at the time these States were organized and prior to the time that the dredging was done by the Government in these waters, which dredging was done by the Government in the year 1893. As we stated before, the character of the testimony produced by the State of Wisconsin, we believe, does not compare in any respect with the testimony produced by the State of Minnesota. The witnesses produced consisted of an entirely different class of men. Very few were even captains, very few had sailed more than a short time, prior to Government dredging, and most of them were roustabouts and men who had fished and hunted in that locality for sport, or citizens of Superior who were extremely anxious to shift the state line in order to grab off some of the Minnesota propery, and men whose testimony was utterly unworthy of credence, not because of deliberate perjury (it is not necessary for us to consider any such matter), but from the inherent defects in such testimony appearing on its face.

We do claim, as said before, that the witnesses who testified for the State of Wisconsin on the channel question as a class were inferior, and as a rule incompetent, and their testimony was so confused and contradictory, as compared with the testimony introduced by Minnesota that it cannot be seriously considered.

We do not claim that some of the witnesses testifying for the State of Wisconsin were not men of character and integrity, but we do claim that the State of Wisconsin had practically no witness who was really competent to testify on account of lack of experience, to say nothing of what might be termed by some as faulty memory.

Mr. John Bardon, a citizen of Superior, a man who had been in the insurance business and in the banking business in a small

way in an early day and who was engaged in other odd jobs at different times and who had owned pleasure crafts of one kind and another, seemed to be the Chairman of the Board of Strategy for the State of Wisconsin. It was he who prior to the taking of the testimony given by Wisconsin loaded a boat with about thirty men and took an excursion up the river and lined up the witnesses for the battle. We think some of these witnesses learned more about these channels on that day than they ever knew before. John Bardon himself tried to give testimony as to the channels in this river, but as he was not a navigator of any experience outside of his pleasure craft, his testimony did not turn out to be of any great weight. He admitted, when pressed on cross-examination, that he was receiving pay from the State of Wisconsin for rounding up this evidence.

It now becomes our duty to consider in detail as briefly as permissible the witnesses for the State of Wisconsin, and the testimony given by them on the question of the channel to the westerly of Grassy Point.

And this brings us to the consideration of the boat-load of witnesses, consisting of thirty in number perhaps, that Mr. John Bardon took up the river that memorable Sunday afternoon before the State of Wisconsin commenced giving its testimony in this case. That there was a great variety of men included in this load of witnesses, there can be no doubt. They ranged from engineers, real estate men, barbers, restaurant keepers, criers for excursion boats to farmers, lumberjacks, paper hangers, and what not. Any one that lived around or near the Bay in years past and friendly to Wisconsin seemed to be eligible, regardless of navigation experience. That they all had an enjoyable time on this excursion, there can be no question, if their evidence is to be believed, but the value of their testimony is what interests us in this discussion.

HIRAM HAYES.

The first witness that we call attention to was Col. Hiram Hayes, whose testimony is found at page 449 of the Record. We do not recall, however, that he was one of the boat load of witnesses, his great age doubtless prevented his going. Col. Hayes was a very admirable old gentleman, a man of integrity and standing, and a man whose honor we do not question for a minute. He had been a well known citizen of Superior since 1854 and came to the City of Superior to represent the old original proprietors in some capacity. He came, as he expressed it, "to grow up with the country." He was at the time of the trial an old man, perhaps nearing ninety years of age, although he was very careful not to state his age any where in the Record, and we understand his age is not to be ascertained from him or from any data in the City of Superior; (he has since died.) He was not a sailor and had practically no experience on the waters in question. As a matter of fact, it was difficult for us to understand why the Colonel was called as a witness, unless it was to give a history of the City of Superior. The only sailing he did was while on pleasure excursions.

On his direct examination he testified:

"Q. I will ask you were you very familiar with the river above Oneota in the early days? A. *Not otherwise than going up in small boats and in excursion boats, which was often.*

Q. Do you remember what course the boats took after they went past Grassy Point going up? A. *My recollection is that they often went through the cut-off up by Pokegama Bay into the river.*

Q. By 'cut-off' you mean the channel southerly of Big Island? A. Yes, sir; proceeding on to Fond du Lac.

Q. In coming down— A. In coming down they

would take the northern route, north of Big Island, on that course, seeming to be aided by current in going home.

Q. And you remember after they got around Big Island the course they took? A. They went with reference to the Minnesota shore?

Q. Very close to the Minnesota shore? A. Yes, sir." (See pp. 463, 464).

This is as far as he got in his testimony with reference to the "main, navigated and navigable channel", as we understand from the examination of the Record and from hearing him testify. It is hardly worth while for us to try to compare this testimony with the testimony of the bluff old Captains that were put on by the State of Minensota, and whose business it was in the early days to navigate these waters and run the channels. On his cross-examination, while perhaps not worth while to discuss in view of the worthlessness of his testimony, given on direct, he testified concerning this Bay:

"Q. Did you ever take any soundings of any kind around this bay yourself? A. Not in a personal way. I was present sometimes.

Q. *You never navigated a boat yourself?* A. *No, sir.*

Q. *You never were wheelsman?* A. *No, sir.*

Q. *Or Captain?* A. *No, sir.*

Q. *You didn't run a boat up the upper St. Louis Bay at all?* A. *No, sir.*

Q. Well, you spoke about going up there on excursions? A. Yes, sir.

Q. You didn't go up there, I presume every week on excursions? A. Not so often; often, however.

Q. Probably two or three times a summer? A. Yes, sir.

Q. Oftener than that? A. I went often.

Q. Well, probably not more than two or three times a summer, would you? A. I wouldn't limit it to that time.

Q. You don't know? A. I know we went often.

Q. Well, at that time or the time that you went up on those excursions you had nothing to do with the running of the boat, did you? A. No, sir.

Q. Gave no direction? A. No, sir.

Q. And you never at any time helped set any of the buoys in the channel? A. No, sir.

Q. Did you know Alfred Merritt during the early days? A. In a general way.

Q. Did you know Mr. B. F. Howard? A. Yes, sir.

Q. John Howard? A. Yes, sir.

Q. Leonidas Merritt? A. Yes, sir.

Q. *You weren't familiar with the navigation of these bays upper and lower St. Louis Bay and Superior Bay in the same way that they were?* A. *I was not.*

Q. *You knew that they navigated the bay, made that their business in the early days, didn't you?* A. *Yes, sir.*

Q. You knew that that was the business of these men in the early days, didn't you? A. I know that they navigated the bays, these waters.

Q. But you never had any such business as that? A. No, sir." (See pp. 471, 472).

Again, he testified concerning these men:

"Q. *You don't claim that you were familiar with those waters in the same way that these navigators were?* A. *I do not.*" (See p. 472).

So far as the main channel was located before dredging took place, we think the testimony of Col. Hayes is eliminated.

E. B. BANKS.

The next witness we call attention to is E. B. Banks. His testimony is found at page 480. Mr. Banks has lived in Superior a great many years and is a civil engineer and surveyor. He had been City Engineer of the City of Superior and was an extremely partisan witness, to say the least. In some respects he practically had charge of securing the evidence, second perhaps only, to Mr. John Bardon himself, but as a navigator Mr. Banks showed he had no more actual experience on the disputed waters in question than Col. Hayes.

At page 494 of his cross-examination he testified:

> "Q. Now, you stated that your only experience, as I understood it, with the navigation of the upper St. Louis Bay above Grassy Point, was the excursions that you had taken up there and also the work that you had done with reference to the construction of some bridges. Is that true? A. *That is true.*" (See p. 494).

Again, he testified:

> "Q. Now, with reference to your navigating the St. Louis river, do you recall who the captains of the boats were on whose boats you rode at that time when you went up on the excursions? A. No, I did not know any of them.
>
> Q. None of them? A. Except Morrison. I remember Dave Morrison as being one of them.
>
> Q. Where is he? A. Why, he was here in town the other day. I do not know where he is now." (See p. 495).

Here it is clear that he not only did not navigate these waters in question himself, but he could not remember the names of Captains of the boats on whose excursions he went at the time he located these channels, except, he said, Dave Morrison, and it

turned out, as we will show by the testimony of Morrison himself that he never was a Captain, nor a pilot, but was a barber by trade, and at one time was a crier, so to speak, for these excursions and took charge of the advertising and talking on shore and on the way up. He apparently had made Mr. Banks believe he was the Captain of the boat, so demonstrative was he while on the excursions.

Again, Mr. Banks testified:

"Q. Well, did you know that the Merritts and the Howards navigated that stream, run boats up and down there? A. No, I did not.

Q. You never heard that? A. No.

Q. Did you never hear that Alfred Merritt was master of a vessel for years here? A. No.

Q. You knew him, did you not? A. I knew him by reputation only, not personally.

Q. Did you know B. F. Howard? A. No.

Q. You heard of him of course? A. Yes.

Q. Knew he was a boat man. A. Well, I don't remember that I do.

Q. How about Mr. McManus that lived here? A. McManus?

Q. McManus; did you ever hear of his running a boat as a pilot up the river? A. No.

Q. *Well, did you have sufficient information of the channels of that river to run the boat yourself?* A. *No.*

Q. *You do not claim that?* A. *Oh, no.*" (See pp. 495, 496).

We hardly think it necessary to spend any more time on the testimony of Mr. Banks, insofar as the question is concerned that we are now discussing. He did not even claim to have sufficient experience to testify with reference to these matters concerning which he was asked.

G. A. TAYLOR.

The next witness that the State of Wisconsin called touching this point was Mr. G. A. Taylor, who was employed by the United States Government as an engineer and was located at Duluth and had been there for many years. His testimony is found at page 506 of the Record. Mr. Taylor did not pretend to be a navigator and knew nothing about the situation at the head of the lake prior to 1893, when the Government started to do dredging westerly of Grassy Point. And we might add that because he refused to testify for Wisconsin that he knew these channels he was severely attacked by defendant's attorneys as a hostile witness although called by themselves (p. 520). He was an inspector for the Government on dredge work from 1893 to 1901, and a junior Engineer from 1901 to 1905 (Record, p. 506). He did not attempt to locate the channel at any particular point before his time, but testified:

> "A. I will say that outside of the deepest part of the channel but not necessarily outside of the channel, entire channel. As I understand it, the channel may be from shore to shore; some of it may be deep and some of it may be shallow." (See p. 515).

His testimoney as before said was not very satisfactory to the State of Wisconsin, and the Record shows that they complained bitterly that he was a hostile witness. On page 520 the counsel for the State of Wisconsin stated that he found this witness to be a very unwilling witness for the State of Wisconsin. Even the Commissioner thought that this statement was uncalled for, and we can find nothing in the Record which indicates any unwillingness of this witness to testify for the State of Wisconsin. It may well be that he was unwilling to go to the lengths that the State of Wisconsin wished him to. However that may be, he testified to nothing on this point of any

importance. His testimony did establish, however, two things: One was that the shoal waters up above Millford in what was known as "Millford channel" was dredged and deepened by the United States Government in the year 1893. This testimony is found on page 515. He also testified that the Government deepened the channel as it now is westerly of Grassy Point in the years 1900 and 1902 (See Record, p. 508).

He testified:

"A. What is known as Minnesota channel, St. Louis River, or the present dredged channel was dredged between the years 1900 and 1902.

Q. You include those years, do you? A. Yes, sir.

Q. That is, it was 1900 to 1902 inclusive? A. Yes, sir." (See p. 508).

This channel that was dredged out and deepened is entirely to the south of the docks and dock property in question westerly of Grassy Point.

LEWIS LACHAPELLE.

We next come to the testimony of Lewis Lachapelle, which is found at page 526 of the Record. He had a license to sail boats and had had a license for a good many years to sail vessels on Lake Superior and the Great Lakes. He lived at Ashland at the time of the trial and had lived there for more than seven years prior thereto. He testified, however, that he did not sail the waters of St. Louis River above Grassy Point until the year 1892. This was just a year before the Government did its dredging on the "Millford" channel above Millford. He only ran an excursion boat for four months, which a part of the time went

up these waters in 1892 (See p. 527) and for a very small part of the season he was captain on said boat. He testified:

"A. I was sailing the boat; captain the first part of the season up until some time in July, I think it was, and then I went clerking and mate on the boat.

Q. The rest of the season? A. For the rest of the season, yes." (See p. 527).

Then he testified as to what course they took when they got beyond Grassy Point:

"A. We kept very close to the Grassy Point side till we got up to near the old Blast Furnace." (See p. 527).

Then he attempted to describe some course or directions that they took, but it is very difficult to find from his evidence what he did mean; he testified as follows:

"Q. You are pointing to a place right opposite the end of Grassy Point? A. Yes, sir.

Q. On the Wisconsin shore? A. Yes, sir.

Q. That is almost south of Grassy Point, isn't it? A. Not quite. We turned with the stern of the boat, on that red clay bank as our ranges till we got to the turn down here where the Blast Furnace is, and then we commenced to turn when we got to the end of this what you call Grassy Point. *Of course I don't know it now on the map,* but there was a smoke-stack down here and a gap in the hill up there from the old Blast Furnace that we used to have for ranges when we turned down there, and when we got outside of the old Blast Furnace we turned again inside of that little island, I think it was called Snowshoe Island then.

Q. That is the island that is indicated here on this map opposite the word 'Slip'? A. Yes; I think that's it.

Q. And you mean you went northerly of that island? A. Yes, sir.

Q. And then what course did you take? A. Turned down here (indicating), and I think it was southwest or little in that direction; of course you keep turning right along all the way from northwest direction." (See p. 528).

The little island that he called "Snowshoe Island" was right on the course from G-B easterly of Grassy Point and is the main channel claimed by Minnesota (see defendant's exhibit 3), and as a matter of fact his last quoted testimony described very closely the channel claimed by Minnesota and not the "Millford" channel at all. As said before, it was very difficult to get head or tail to his testimony with reference to this matter.

Again, he testified on being pressed by his counsel:

"Q. Above that when you were going around Big Island what course did you take? A. *I just forget the course we took around.* Of course, you are turning nearly all the time until you pass here until you get down to where the old brickyard here is, or this Indian Point. I think that is it right there (indicating), if I understand where the map is. And then we went inside of this here what we used to call Fishermen's Island; I don't know what they call it now." (See p. 528).

It is very clear that with his little experience on this part of the River in the year 1892, twenty-eight or nine years before the trial, it is not to be wondered at that he was confused and lost his bearings entirely on this occasion, and in any event it would be surprising, indeed, if his testimony from his slight experience could be of any value upon the question before the Court in this case.

On his cross-examination he was asked:

"Q. Who did you see first with reference to this mat-

ter? A. I think it was Mr. Bardon.

Q. Mr. John Bardon? A. Yes, sir.

Q. He came down to Ashland to round up some witnesses, did he? A. I don't know what he was there for.

Q. Did he see several of you men down there about this matter? A. He was talking to me on the ferry boat. I run a ferry boat down there.

Q. How long ago? A. Oh, a few weeks ago." (See p. 531).

He testified that he had known John Bardon for about forty or forty-five years:

"Q. On pretty friendly terms with John Bardon? A. Yes, sir." (See p. 531).

In fact, he testified he knew all the Bardons (p. 532). He testified about the river excursion on Sunday:

"Q. *Now, did you go up the river Sunday?* A. *Yes, sir.*

Q. *Wisconsin had a party of about thirty-two on the boat, didn't they?* A. *I didn't count them. They was about that many.*

Q. A lot of them were friends and acquaintances? A. Yes, sir.

Q. And went up for the purpose of looking over this river so you could testify, didn't you? A. Why, I don't know it was exactly to testify, but we went to look at the new docks.

Q. What new docks? A. Coal-docks. I haven't been up the river for years.

Q. What coal-docks? A. I forget the name of the coal-docks now. It's up at the other end of Grassy Point." (See p. 532).

Apparently he had no independent recollection of the short

period of time that he worked on these waters twenty-eight years ago, and the only way he could locate it was by fixing the time of the World's Fair. He said:

"Q. I understood that the way you could tell was because you looked up some old records which you had and found it was the year before the World's Fair at Chicago? A. Yes, sir.

Q. You had no independent recollection of it at all? A. Why, I had some, certainly." (See p. 533).

In all probability it was not until after the dredging was done by the Government in 1893, that he ran up there if at all. We do not think it is necessary to attempt to compare the testimony of this man with practically no experience with the testimony of the Captains who testified for the State of Minnesota.

We should perhaps call attention to the fact that he testified that from 1896 to 1900 he sailed the "Mystic" for Captain Stevens, the witness who testified for the State of Minnesota that the "Millford" channel was never used, except for the purpose of getting into Millford Slough or Millford Bay. This Captain Stevens was a man who it must be conceded was thoroughly familiar with these channels, and who had sailed them for years, testified that practically the only channel that was used was the channel G-B shown on Exhibit 3, while the man that was employed to run a tug for Captain Stevens testified directly to the contrary. (See p. 534). He did not even know that any dredging had been done westerly of Grassy Point prior to 1900 (See p. 534). When asked about the channel from G to B on Minnesota's Exhibit 3, he testified:

"A. I never thought there was any boat of any draft to go the south channel.

Q. You mean to say that the Barker couldn't go the south channel in 1892? A. I wouldn't say she couldn't go.

Q. But you never tried it? A. No, sir.

Q. How many feet did you go from this little island that you call Snowshoe Island that you said you went to the north of? How far did you miss it? A. It was close to the island.

Q. You just missed the island, didn't you? A. We wasn't a great ways from the island.

Q. *Well, about how many feet was it; 75 or a hundred?* A. Why, it was in the neighborhood—I wouldn't state exactly the number of feet.

Q. You practically followed the same course all the time that you were running the boat in 1892? A. Yes, sir.

Q. Who else was with you on that boat; anyone else here in the room? A. Yes, sir.

Q. Who? A. Captain Smith.

Q. What was he doing? A. He was firing on the boat first.

Q. What is his first name? A. Ed, Captain Ed Smith.

Q. He is now running the America, isn't he? A. Yes, sir.

Q. And he was firing on that old boat, was he? A. Yes, sir.

Q. How long did he fire on that boat? A. Up until this change was made in July that I spoke about.

Q. Then what did he do? A. He took the boat to sail. He was captain.

Q. You think you ran fully 75 to a hundred feet north of this island (Snow Shoe, Pie Island), do you? It was fully that much? A. Well, it was north of the island; I wouldn't state the number of feet. It is in that neighborhood." (See p. 535).

If the above is true then he must have taken the same channel in 1892 that all the old captains took, being the channel G-B because the "Millford" channel was a long, long way from Snowshoe Island at any point and if he went the "Millford" channel it would be impossible to go the "short cut" as there was no connection between the two.

ED SMITH.

The next witness that was called by the State of Wisconsin was a man by the name of Smith. He was another man of mixed Indian blood. He had lived in Duluth since 1883, but was born at Superior. He was at the time of his testimony running a steamer down on the north shore called the "America", owned by the Booth Company that carried passengers and fish doing a coast trade along the north shore (See p. 538). He testified that he did more or less navigating on the waters of the St. Louis Bay since 1879. Since 1892, however, he had been sailing on the Lake and had not navigated in the bays much. He was then called on to describe the channel that was usually taken westerly of Grassy Point, and his testimony is found on page 542, and it comes much nearer describing the channel claimed by Minnesota than it does the "Millford" channel. He stated that it was from 1500 to 2000 feet from the Minnesota shore. One thing is certain, that if he took the "Muskrat" channel or "Millford" channel hugging the Minnesota shore he was only a few feet from the Minnesota shore, and if as he said he was 2000 feet from shore, he could not have been in "Milford" channel. His testimony showed that he was very uncertain as to just where he did go in those early days (pp. 544, 545). Especially do we call attention to page 545, where he became terribly confused on the direct examination conducted by his own counsel. He kept repeating that *it had been a long while since he had been there and he could not tell much about the maps*, etc., but he still

stuck to it that he went very near to this little island which is directly on the channel G-B claimed by Minnesota. His testimony was so inimical to the position of Wisocnsin that the Commissioner, on the 14th day of August, stated that Mr. Smith's testimony was almost unintelligible, adding: "I want to caution you in getting the testimony of these illiterate witnesses and others to have what they are testifying to appear in the record."

On pages 548 and 549 is a record of a somewhat heated controversy that arose between the counsel representing the different states over the conduct of the Commisioner, the counsel for State of Minnesota claimed that the Commissioner was very much biased and prejudiced and was assisting in every way the State of Wisconsin. It finally got so bad that before the trial closed an objection was raised on the record to his taking part in the trial of the case. The conduct of the Commissioner was so objectionable that the attorneys for the State of Wisconsin conceded that the conduct of the Commissioner was unwarrantable, contrary to the understanding of counsel and that he should refrain from taking part in the trial thereafter. Attention will be called to this later on.

Suffice it to say, that the testimony of Smith did not help the cause of Wisconsin in the slightest, and as a matter of fact, insofar as it was pertinent at all, it was corroborative of the testimony of the witnesses of the State of Minnesota that the channel G-B was the "main, navigated and navigable channel" westerly of Grassy Point prior to dredging by the Government.

JOHN SHEA.

The next witness called by the State of Wisconsin was John Shea. He had lived at the head of the lakes for about thirty-

five years and had a home in Duluth at the time of the trial and owned a little tug and had operated a tug for many years last past. His testimony is found at page 549 of the Record. He is the witness who testified directly contrary to the testimony of Mr. Brewer, the man for whom he worked. That his memory was bad and his experience limited in the waters in question in the early days is demonstrated by his evidence. He was asked on his direct examination:

"Q. What year did you first navigate the waters of the St. Louis? A. I couldn't say whether is was '87 or '88, either one of the two years.

Q. What kind of a boat did you have? A. Tug boat.

Q. And to what extent did you navigate the waters of the St. Louis in '87 and '8? A. Well, I went up there a number of times with boom sticks and towed logs or scows, *I don't remember.* I do remember towing logs and boom sticks for Duncan and Brewer and others.

Q. Were you up the St. Louis frequently that year? A. *Well, I wouldn't say; a number of times, yes, but I wouldn't say how often.*

Q. Now, that was your first, you say? A. That's my first year.

Q. Well, what years after that did you navigate up the St. Louis? A. Well, when that 90 million feet of logs came down, '89, I think.

Q. That year? A. That year.

Q. What year do you think that was? A. '98-'89.

Q. '89? A. '89.

Q. To what extent were you on the river that year? A. Well, I towed them logs that came down the river. I was the person that got all the boom sticks. They telephoned down from Thompson when the boom broke, here, to collect all boom sticks we could get here in Duluth and

Superior; and I got them, and I got them together, and I tied one end, made one end fast to the pier right north of the N. P. bridge on the Duluth side at Rice's Point, and then I ran a length of the boomsticks away up the bay here and dropped anchor and waited there until the logs came down; about eleven o'clock at night when the first logs began to come.

Q. Now to what extent did you navigate above Grassy Point that year? A. Well, we went and picked up them logs. They were scattered all over every place, through woods, swamps, out of the river.

Q. *Did you just navigate up the St. Louis that year in connection with that broken boom of logs?* A. Yes.

Q. Now, what other navigation have you done up the St. Louis River? A. *Well, scows, I think, and—I don't remember; it's so long ago; but I have been up there many times with other boats.*

Q. Many times? A. Many times with other boats.

Q. And different years? A. Yes, with all lines, yes.

Q. Did you go wherever your business called you with your tugs? A. Where I could go. I went to Fond du Lac, went up there up the river.

Q. Navigated up to Fond du Lac a great deal? A. *I wouldn't say—a number of times;* many times, yes. The only time I was there steady was during them logs. That was steady for maybe six weeks, two months, something like that, right along, day and night.

Q. Other years? A. *Other years very seldom; once in a while when I was doing job work, you know; I don't remember.*

Q. Did you make some trips up the St. Louis most every year? A. *Oh, no; there was many years I did not.*" (See p.. 550, 551).

It is hardly necessary, we think, to attempt to compare the testimony of this witness with the testimony of the captains

who testified for the State of Minnesota and who had spent years in navigating the waters above Grassy Point.

On page 552 he testified that in 1888 and 1889 he ran a boat up these channels that drew nine and ten feet of water. If the other testimony is true, and the soundings shown on the Governments charts are true, this certainly cannot be the fact. Then, he was asked by his counsel on direct examination:

"Q. Did you take the channel that was usually navigated at that time? A. *Oh, I have taken both channels.*

Q. Now you say both channels. What channels do you mean? A. Well, we called it the main channel and the cut-off. I have taken both of them.

Q. What was the main channel used for? A. For deep water, for deep draft boats.

Q. What was the cut-off used for? A. Well, they could use it for lighter draft boats, if they want to, or take the main channel.

Q. Both channels were used at that time? A. Yes. Different boats, yes.

Q. *What channel did you usually take when you went up in '87 or '88 that you speak of?* A. *Well, I took the cut-off.*

Q. Did you always take the cut-off? A. *I did with that boat, yes.*

Q. That is, in '87 or '88? A. Yes, with the Tug Hope." (See p. 552).

Here it will be seen that even this man had to testify that the channel that he used at that time was the channel claimed by the State of Minnesota, as they could not take the "Millford" channel and take the "cut-off".

Then, he was asked:

"Q. Then when did you navigate a deeper draft boat up there? A. In '89.

Q. And how much was that? A. *Between nine and ten feet of water.*" (See pp. 552, 553).

We think that it is perfectly clear that this witness was wholly wrong on his dates, because no one with experience testified about running boats of that draft up there until the dredging was done in the year 1893, and in 1893 dredging was done by the United States Government which allowed boats to come down the "Millford" channel that could not get down that Bay before that time owing to the shallowness above Millford. Indeed, in 1893, owing to the dredging improvement of the upper St. Louis Bay and the River the "main, navigated and navigable channel" was completely changed from what it was prior to that time, but this did not change the State line.

He then goes on and describes the "Millford" channel, undoubtedly as it existed after the dredging was done in 1893. At page 555 he was asked to point out the main channel, which he did, pointing to the "Millford" channel, and undoubtedly after 1893 deeper draft boats could use this channel, as said before, than could use any channel in upper St. Louis Bay prior to that time.

On cross-examination, which is found at page 556, this witness admitted that John Bardon had been to see him and talked to him about the case (See p. 556). He admitted that he went up with the boat load of witnesses prior to the time that he gave his testimony (See p. 556). He stated that the crowd talked over the channels:

"Q. Practically all agreed where you went, no dispute? A. Well, I don't know whether they all agreed.

Q. You never heard any dissent, did you, among that crowd, as to where the channels were? A. Not that I know of. We didn't all agree, you know. *There was two or three of us or some of us fellows 'this is the way I went' and 'this is the way I went', yes.*

Q. Do you mean to tell us that this Exhibit 29 shows the exact channel that you always took? A. I didn't say. I said about.

Q. Looked something like it to you? A. Yes. I said 'about'." (See pp. 556, 557).

This testimony shows how indifferent and inaccurate the fellow seemed to be as to his actual knowledge of the conditions prior to the time of dredging in 1893. He was asked concerning the testimony of Ed Smith, the witness called for the State of Wisconsin who described the course he took as the Minnesota channel, this being the testimony which raised so much of a row between the Commissioner and the attorneys heretofore called attention to. Shea contradicted this witness apparently. He testified concerning the route that was taken about this Snowshoe Island:

"Q. And I think two witnesses said that when they went north of Snowshoe Island they went within about 75 to a hundred feet of that island? A. *Well, they were rattled.*

Q. *They were rattled?* A. *Yes. They were rattled; because that is about where we go when we leave for the cut-off. They were mistaken, to my idea.*

Q. That would be to the south of the island, wouldn't it? A. Yes. When they took the other channel they went about that far.

Q. When you were up there Sunday and aside from

the time you took the sports up to see the fights you hadn't been up there since 1890? A. Yes, I have been up there many times. I have been up there with the tug I own now, the Crosby, and I have taken the Government channel and went between the buoys that the Government laid out for us.

Q. *When did you take the sports up?* A. *Oh, between* 1893 *and* '6 *or* '7.

Q. *And you stayed and enjoyed the fights with the rest of the sports? A. Sure, sure."* (See p. 557).

Of course, as to where he traveled in 1893 is wholly immaterial and there is where the confusion in the testimony of this witness arose. He had gotten his dates entirely mixed. After 1893 he could go up the "Millford" channel, owing to the improvements, with a ten foot boat or even with a twelve or thirteen foot boat, but prior to that time he could go with neither.

He was asked concerning this dredging above Grassy Point:

"Q. Where was it? A. Oh, it was all along the flat there; the Government channel is there and where they filled them places.

Q. In 1893? A. I don't know the year. I know it was after 1889.

Q. Well, what year was it? A. Well, I don't know the year.

Q. You wouldn't attempt to say? A. The Government has got that.

Q. If someone hadn't talked to you about these times you were up there you wouldn't remember that? A. What?

Q. The year. A. *I don't remember now, I tell you. When the logs came down I was there, and they all know, at least they have got the records for that.*

Q. *Is that the only boat you ran, this boat drawing nine or ten feet, in getting these logs?* A. *At that year, yes.*

Q. You couldn't get to any shoal places? A. I didn't get in to any shoal places?

Q. Who was picking up the logs? A. The lumber firms, the owners, I suppose." (p. 558).

We call attention to this testimony, as it shows that he could not have been picking up logs all over these bays with this deep draft boat at the time he says he did.

Again, he testifies to his lack of memory:

"A. *Well, I don't remember. I don't remember thirty years ago what boats were there, or twenty-nine years.*

Q. There must have been a good many little boats going over the shoal places, weren't there? A. I don't remember.

Q. Can't remember one? A. No, I can't remember." (See p. 558).

Again, he showed his lack of intelligence in the following:

"Q. I want you to step up here and look at a map. I will ask you this: Could you take a map that didn't have that yellow streak on like was shown you on Exhibit 29 and point out that exact channel that you came over, make a drawing of it? A. Take a map.

Q. Yes, showing the Minnesota shores, and you draw the channel yourself? A. No.

Q. You couldn't do that? A. I couldn't do it. All I know I was going by the Government chart. That is all we had to go by, the Government chart." (See p. 559).

Again, he was asked about taking his boat drawing nearly ten feet of water through these channels in 1889:

> "Q. In 1889 you had a boat that drew between nine and ten feet of water? A. Yes." (p. 559).

Then he was asked:

> "Q. Now I call your attention to some soundings here which are Government soundings, Government figures, four feet one, seven feet three, seven feet nine, and five feet nine, running clear across between what is marked as the two dock lines on that channel. Now the evidence shows that there was no dredging in that particular place until the year 1893. Now I want you to show on this record by your testimony how you went over that bar with a boat drawing between nine and ten feet of water, if that is the place you claim you went, if that is the channel you claim you went? A. *Yes. That is the channel we went. Is this authentic?*
>
> Q. That is a map that is put in here by the State of Wisconsin and shows the Government soundings. We are not faking you here. A. Well, we went there.
>
> Q. *You claim you went over that with a boat drawing between nine and ten feet?* A. *Yes... That is the channel here.* If you show me the Government chart I will show you where I went." (p. 559).

Of course, his own testimony shows that he could not have gone where he said he did in the year 1889. It seems to us clearly that it was merely confusion of dates and that the witness never went with a boat drawing nearly ten feet of water in upper St. Louis Bay prior to the year 1893 when the dredging was done.

He was asked concerning this matter again:

> "Q. You never struck any such point as that; you never struck any such shoal as that? A. No.

Q. *You couldn't hop over any such shoal as that with your boat drawing nine or ten feet?* A. *No.*

Q. Don't you think that if that shoal is there, or was there prior to 1893, that you must be mistaken about running a boat at that point, drawing between nine and ten feet? A. *If it was there we couldn't get over; that's sure.*

Q. Don't you know that the Government did dredge that out in 1893; don't you know that the Government dredged it out for the purpose of allowing barges to bring lumber down from the saw-mills to Duluth? A. No. I wasn't there during those years. I was on the Odin doing the ferry end of it between Duluth and Superior." (See p. 560).

It seems to us that this testimony demonstrates again the inaccuracy of the evidence given by Shea. The soundings shown by the Government charts cannot be contradicted and were not contradicted by any competent witness, but this witness was frank enough to admit that if the charts showed the soundings correctly he could not go over these waters with the boat that he said he used at that time.

But that is not all. When asked concerning his employment with Duncan and Brewer and his working for Mr. Brewer and taking him on the boat with him, he had to admit that Mr. Brewer was a man who was familiar with these channels and knew perfectly well where they were. He testified:

"Q. Mr. Brewer was the man that had charge of the outside work? A. Yes.

Q. He was the man that you went up the river with? A. I don't know whether I went up with him or not.

Q. He was on the boat frequently with you, wasn't he? A. I don't remember. I hauled some logs for him.

Q. *He had direct charge of it, did he not?* A. *Yes, sir.*

Q. *He was familiar with those channels?* A. *Yes.*

Q. *You never took him down that channel you have described?* A. *No. He was on another boat at that time. He was on a lighter draft tug.*

Q. *Then you went a different way?* A. *I certainly testified that from the start, yes, sir.*

Q. When you were working for Mr. Brewer and when he came down with you, didn't you go to the south of Big Island as well as north of the Big Island? A. *No.*

Q. Always went south of Big Island? A. With that tug I was towing for him.

Q. As a matter of fact, didn't you come down on both sides of Big Island with Mr. Brewer when you were towing for him? A. *I don't remember.*

Q. How can you remember where you went— A. *I don't remember. I know I have been on both sides; with the light draft took channel on the south side.*

Q. *And you may have come down with Mr. Brewer on both sides?* A. *I may. I don't remember.*

Q. *Mr. Brewer was perfectly familiar with that river, wasn't he?* A. *He ought to be, yes.*" (See pp. 560, 561).

Here he testified that he did not know whether Brewer was with him or not, at first, and did not know whether he went with him on the boat, and then he said he did and went with him frequently. He first denied that he came down one channel with Brewer and then admitted that he may have come down both. Testifies that Brewer was thoroughly familiar with the channels. We are taking more time in discussing the testimony of this witness than we will perhaps take with any other witness called by the State of Wisconsin on this point, and we do this for the reason that he was really the only man that held a license called

by the State of Wisconsin that showed any experience sufficient to qualify him in any way that could command any respect, but inasmuch as his testimony was so contradictory, confusing and confessedly unreliable and at absolute war with the Government charts and with the testimony of all the other captains who were familiar with the waters in question, we are spending this time with his testimony, as aforesaid.

He was then asked concerning the witness Dave Morrison that was called by the State of Wisconsin as its witness and the man whom E. B. Banks referred to as the only captain, as we understand it, that he rode with on these waters in upper St. Louis Bay whose name he (Banks) could recall. But Shea contradicted Banks entirely concerning Dave Morrison being a captain or licensed in any way:

"Q. What about Dave Morrison? A. Never heard of him as being a captain on a boat; don't believe he was.

Q. Did you hear Mr. Banks testify yesterday? A. No.

Q. That Dave Morrison— A. Yes, Dave Morrison. I guess, if you find out, he hasn't got license to sail a boat." (See p. 561).

Strange as it may seem, Shea was right on the question of Dave Morrison and Mr. Banks was wrong.

The witness Shea further showed his ignorance and incompetence when his own counsel took him on redirect examination:

"Questioned by Mr. Gard.

Q. Counsel pointed you to one of these exhibits. I will ask you if that wasn't Wisconsin's Exhibit 31-E? Just come

around here and look? A. I know nothing about E, but if they showed me a Government chart I would tell them.

Q. This is the chart that counsel pointed you to, is it not, this chart here? A. Yes.

Q. And this is Wisconsin's Exhibit 31-E? A. Yes. Why don't you show us something we are familiar with, chart, Government chart?" (See p. 562).

Again, he was asked on re-cross-examination about his working for Duncan and Brewer hauling logs and boom sticks after 1893, and he testified:

"Q. Duncan and Brewer towed logs and boom sticks down that river after 1893, didn't they? A. I think so.

Q. You did some work for them after 1893? A. I did, but not with the tug boat.

Q. But you did some work for them after 1893? A. I can't remember.

Q. What other boats did you use in 1889 besides the ten-foot draft boat? A. No other tug that I know of, but the year before that I think—

Q. Weren't you picking up logs with some smaller boats or tugs in 1889? A. I don't remember.

Q. Don't remember? A. No, I don't remember. I do remember about getting the telegram about their breaking away and I was the man that went to get the boom sticks." (See p. 562).

On pages 563 and 564 is a continuation of Shea's answers: "I don't remember." Finally the Commissioner took him in hand to try and straighten out his testimony, which had gotten into inextricable confusion, and he testified concerning the channel he took when he went with the John Bardon party just be-

fore he gave his evidence. The Commissioner asked him:

"Q. Did you find any structures in the old channel? A. That's what I say. There's obstructions in the old channel.

Q. Did you find a structure called the Carnegie Dock up there? A. I did.

Q. Did you look at that? A. I did." (See p. 565).

Here it is perfectly plain that what he called the "old channel" was the channel that he traversed with his boat drawing nearly ten feet of water after the year 1893, and undoubtedly he came down the old "Milford" channel after that time with his ten foot boat and the structures, to-wit: the Carnegie dock and the Zenith Furnace Company dock, undoubtedly were built out over this "Millford" channel. We ask the Court to compare the intelligence of this witness, as indicated by his testimony, and the accuracy of his memory as shown by his testimony, with the intelligence and accuracy and general character of the testimony given by the captains that were called by the State of Minnesota, and we think there can be no question that the truth lies with the testimony given by the witnesses for the State of Minnesota.

WALTER J. CAYO.

We now call attention to the testimony of a man by the name of Walter J. Cayo, called by the State of Wisconsin, and his testimony is found on page 566 of the Record. He testified on his direct examination as to where he lived:

"Q. Captain Cayo, where do you live? A. I have lived in the City of Duluth for thirty-two years.

Q. Where do you live now? A. I moved over here about a month ago.

Q. You lived in Duluth thirty-two years prior to that time? A. Yes, sir.

Q. Moved over here about a month ago, you say? A. About a month ago.

Q. By that you mean in the City of Superior? A. Yes, sir." (See p. 566).

Attention will be called to his cross-examination a little later on, where it is shown that it was a curious coincidence that his removal from Duluth after residing there for thirty-two years, to the City of Superior, occurred at a time when Duluth went "dry" and Superior went "wet," and we think it not an unfair inference to be drawn from his testimony as it reads in this case, that his admitted indulgence in a few glasses of beer was not the limit of such indulgence just prior to the time that he testified.

Before calling attention to the business that Cayo was in, we certainly give Wisconsin credit in the securing of witnesses to following biblical directions in certain respects: They went into the by-ways and hedges for their testimony.

Concerning his business, he testified:

"Q. What has been your business in past years? A. Been a paper-hanger and all round general painting.

Q. What is your business prior to that time? A. Master of steamboats.

Q. Have you carried a pilot's license? A. Yes, sir.

Q. Master's license? A. No, sir; first-class pilot.

Q. When did you carry a pilot's license? A. From 1887 until 1907.

Q. What navigation did you do in those years? A. Why, the principal part of my work is in Duluth and Superior harbor.

Q. With what kind of boats? A. Handling ore boats and freight boats and lumber barges and so forth, passenger boats in and around the harbors.

Q. To what extent have you navigated the St. Louis River? A. Well, I have been up there off and on for several years during the time that the lumber mills were running up there.

Q. 'Up there', do you mean New Duluth? A. Yes, sir.

Q. Any other business up there? A. Why, I have went up to Fond du Lac. In '95 I had a passenger boat there chartered part of the season.

Q. *And when did you first navigate the St. Louis River above Grassy Point?* A. About 1900.

Q. Do you mean 1900 now? A. Yes; 1900.

Q. What? A. 1890; 1890.

Q. That was more than twenty years ago, was it? A. *Yes, sir; it's about 22 years ago; something like that.*

Q. What boat did you use at that time? A. Well, when I was on the Inman line I used the Tug Buffalo; Berry line I used the Tug Tomlinson; and in the Singer line I was in the Tug Abbott, H. B. Abbott; and also in the Tug Excelsior." (See p. 567).

It took a great deal of prompting to get the witness to admit that he had been up the River prior to 1895 at least, but his testimony shows that his experience was confined practically to the time that the saw mills were running at New Duluth. The Record shows these mills did not commence their heavy

operations, nor was there shipment of lumber from these mills in heavy draft boats until the dredging was done in 1893. Cayo testified on this point that he worked on the tug Buffalo and the tug Tomlinson, and the tug Tomlinson he testified drew *eleven feet six inches of water* (see p. 568). The tug Abbott that he worked on drew *ten feet;* the tug Superior that he worked on drew *ten feet;* the tug Excelsior drew close to *eleven feet.* He was asked then:

"Q. What other boats have you used? A. None up the river.

Q. None other up the river? A. No, sir.

Q. Now, what kind of business were you engaged in with these boats going up the river? A. A vessel-towing business.

Q. What kind of cargoes were you towing? A. Lumber, carrying lumber.

Q. What on, scows? A. On sailing vessels, towing barges.

Q. That is, they would load at the mills up the river and you would tow them down? A. Tow them down and connecting them on the steamboat outside in Lake Superior and go down the lake with it." (See p. 568).

This evidence is conclusive that it was after the dredging was done in 1893 before he ever went up the St. Louis Bay and River with the three or four tugs that he named drawing from *ten to eleven and a half feet of water.*

He was then asked this question quite skilfully by his counsel:

"Q. Now, what years did you cover or what years was it that you used these boats that you have mentioned up the

St. Louis River above Grassy Point? A. Between 1890 and 1897." (See p. 568).

That might be a perfectly truthful answer, but it is demonstrated by the Record, we claim, that he never used any of those boats from the years 1890 to 1893, but he well may have used them from 1893 to 1897 and probably did. He further testified on this matter:

"Q. Were you doing much business up the St. Louis River in these years? A. There was considerable lumber shipped from there.

Q. *Did you do any other business than tow lumber boats up the river?* A. *No, sir.*" (See p. 568).

This, again, is proof that he did nothing in upper St. Louis Bay until the dredging was done in 1893. *All he did was to tow lumber with the heavy draft boats.*

Again, he was asked as to his course:

"Q. What course did you take, Captain, going up the river, after you go around Grassy Point? A. *Well, there is no particular course there; it is a circuitous route, serpentine.*" (See p. 568).

We now call attention to the cross-examination of this paper-hanger, who at one time claims he was a pilot hauling lumber from New Duluth, but nothing is more certain than that this was after dredging was done in 1893. He was asked concerning the change of his residence from Duluth to Superior the month previous to the time he gave his testimony:

"Q. How did you happen to move to Superior? A. Liked the town better, more business over here.

Q. That is when Duluth went dry you preferred to go to a wet city? A. Not necessarily; more business over here in my line of business.

Q. Where is your business? A. Painting and paperhanging and decorating and so forth.

Q. I suppose you didn't object to the city being wet when you came over? A. Not a bit.

Q. And you did object to Duluth going dry? A. Not necessarily.

Q. But when it went dry you moved over to Superior? A. Quite a while afterward." (See p. 573).

When asked concerning his trip up the River with the crowd of witnesses just prior to the hearing he testified:

"A. *Well, they asked me to go up with them and find to the best of my ability, to find where the old natural channel was.*

Q. You knew they wanted the channel to run in the Carnegie coal-dock and the Zenith Furnace Company? A. I don't know.

Q. You knew they wanted it there? A. *They didn't state in so many words.*

Q. Didn't you understand from what was said that that's what they wanted? A. They told me it was a controversy between Wisconsin and Minnesota.

Q. Didn't they ask at that point— A. They got to the point of theCarnegie Fuel Company and asked for the old channel and I showed them where it used to go.

Q. You said you started to navigate in 1890? A. 1887.

Q. *You didn't run up the river in* '87? A. *No, sir.*

Q. Where were you? A. I was around the Duluth-Superior harbor.

Q. When was the first time you went up the river to upper St. Louis Bay? A. Somewhere in 1890.

Q. Do you remember the time? A. Sometime during that season.

Q. *The first thing you did up there, was it not, was to haul lumber?* A. *Yes, sir.*" (See p. 574).

We then took him to task concerning the deep draft boats that he said he ran there from 1890 to 1897, and he testified as follows:

"Q. Your first boat was the Buffalo? A. Yes, sir.

Q. *Drew nine foot six?* A. *Yes, sir.*

Q. *Fisk drew nine?* A. *Yes.*

Q. Those were tugs; they hauled no loads? A. They were tug boats.

Q. *The Tomlinson, eleven six?* A. *Yes, sir.*

Q. When did you use the Tomlinson? A. *In 1897.*

Q. When did you use the Fisk? A. *Somewhere about 1891; '91 or '92; something like that.*

Q. *Can't you place it any closer than that?* A. *No.*

Q. *When did you use the Buffalo?* A. *I was on her five years, from* 1890 *to about* 1895; and we didn't sail the Fisk regularly. *I simply made a trip or tow up the river when possibly my boat was broken down or something; but I knew I had been on her up the river.*

Q. And the Excelsior drew eleven feet? A. *No; drew ten foot six.*

Q. Didn't you say eleven feet? A. No, sir.

Q. When did you sail that? A. 1897.

Q. For how long? A. One season." (See pp. 574, 575).

This testimony makes it perfectly clear that this man, if he ran boats at all, did not run them until after the dredging was done in 1893, because boats drawing from nine to eleven and a half feet did not go up in seven or eight feet of water. The Court will also notice the hedging that was done by the witness when he was called upon to designate the exact years when he did this sailing. He was then asked to take a map and attempt to designate the channel that was used, and the following took place:

"Q. That is the way the new channel goes, is it? A. Yes. Looked that way to me on this map.

Q. Now, as a matter of fact, that isn't the new channel at all, is it? A. Well, the new channel ran along here (indicating).

Q. Then this is the new channel, in your opinion, as marked on this map, between the dock line shown here I called your attention to? A. I never was through that new channel.

Q. I ask you whether this was the new channel as shown on these maps? A. (No response).

Q. The old river bed didn't run between these dock lines marked 'dock lines' that I called your attention to? A. These dock lines there, the new channel is entirely foreign to me as far as Grassy Point is concerned." (See pp. 575, 576).

It will be noticed that this testimony does not tend to inspire one with confidence in the knowledge or experience of the

witness. Then he was asked concerning the taking of boats drawing three feet more than the depth of the water he was navigating prior to the time that the dredging was done in 1893. He testified:

"A. We towed lumber barges right up to New Duluth in 1890 till 1896 or '7.

Q. Did you take a tug over any such shoal places, a tug drawing nine feet of water? A. *Never touched a thing.*

Q. *You are entirely mistaken in your dates, aren't you?* A. *No, sir.*

Q. You did haul lumber there after 1893. A. Yes, sir.

Q. That is, these sail-boats you speak of? A. Yes.

Q. How much water did they draw? A. *From eleven to eleven foot six.*

Q. *And you hauled those down there in* 1890, *didn't you?* A. *Yes, sir.*

Q. *And in* 1891. A. *Yes, sir.*

Q. Don't you know that that shoal place that I have called your attention to wasn't dredged until 1893? A. *Never struck the shoal place. The only shoal place that I ever saw was up there around Big Island where Spirit Lake—"* (See p. 576).

Again, we state that his testimony is impossible, and the Government survey shows it would be impossible prior to 1893 to run a boat with eleven or ten or nine foot draft over these shoals.

He was then asked with reference to Minnesota's Exhibit 1, being the Meade map concerning the channel running from A-

G-B-C, and he testified in answer to the question as to whether he remembered that channel:

"Q. *Did you ever go over that?* A. *No, sir.*

Q. *Did you ever hear of anybody going over it?* A. *Not that I know of.*

Q. *There wasn't any channel there at all?* A. *No, sir.*" (See p. 578).

This witness continued his testimony in a most confused and contradictory manner on pages 580 and 581, but we hardly think it necessary to comment upon the testimony of this paper-hanger or to compare it with the testimony given by the boat captains who testified for the State of Minnesota.

ROBERT MORRIN.

The next witness whose testimony we call attention to is Robert Morrin. This testimony is found at page 581. He stated he had been an Indian interpreter for the Government; lived at Bayfield, Wisconsin, and apparently was a very old man. He said he knew the old Indians that used to be here in the '60's and the '50's. They made a treaty at Madeline Island. Concerning this phase of the case, he testified that he went up the St. Louis River once in '63 or '64, and that he went up there when they paid off the Indians. The agent's name at that time was L. E. Webb (p. 582).

When asked concerning what kind of a boat it was, he testified:

'A. It was a good-sized boat but I don't remember the tonnage or anything like that.

Q. Do you remember how much water it drew? A. Seven or eight feet.

Q. *Have you any recollection of what course that boat took after it passed Grassy Point?* A. *Well, sir, I don't know anything about them names at all. We just followed the river.*

Q. *Just followed the river?* A. *Yes, sir.*" (See p. 583).

We are frank to say that we do not understand why Wisconsin thought necessary to call this witness, a man who had never been up the river but once in his life and then in 1863 or '64, and testified on his direct examination he did not know where he went; *he just simply "followed the river."*

He was asked again by his counsel:

"Q. Did you follow along close to the Minnesota shore or close to the Wisconsin shore up this way? A. *Why, very close to the shore part of the time.* I can tell by the ridge.

Q. Which shore, Minnesota? A. I suppose, it was on that right-hand side.

Q. Right-hand side as you went up? A. Yes, sir." (See p. 583).

The only important thing about this man's testimony was the fact that there was so much he did not know.

JAMES P. COLE.

The next witness called by the State of Wisconsin was James P. Cole, and his testimony is found at page 585. He testified

that he had been a tug captain for thirty-four years, but he did not pretend to have much experience, if any, on upper St. Louis Bay prior to the time of the dredging. He said he ran a few times each season on Upper St. Louis Bay with different tugs, but very little. As to when he did it, he doesn't say. It is evident that he is describing the route he took after the dredging was done in 1893 (see pp. 588, 589).

On his cross-examination, however, he locates more definitely the time when this work was done and practically demonstrates that he had no knowledge of the situation in upper St. Louis Bay prior to the time that dredging was done in 1893. He says himself that prior to that time practically all his work was done easterly of Grassy Point:

"Q. *And most of your work was there?* A. *Most of the work was there, yes, sir. Oh, we ran quite a bit between that and the West Duluth bridge.*

Q. That is you mean by the West Duluth bridge the Northern Pacific bridge? A. No, away up above. There is the Interstate bridge, a railroad bridge, that is the Northern Pacific, and then there is one away above, this side of Grassy Point.

Q. You used to go up there some? A. Yes, sir.

Q. Mostly this side of that bridge? A. *All on this side.*

Q. So you never dredged above the Northern Pacific bridge that ran from Grassy Point across to Wisconsin? A. Only what was done at the blast furnace.

Q. That was within the last twelve or thirteen years? A. Yes, sir.

Q. And were you hauling that stuff with the first three tugs? A. The majority of it went out into the lake.

Q. Where did the rest of it go? A. Spread along most anywhere, where we could get in on that scow.

Q. But none of it was hauled up above Grassy Point? A. No, sir.

Q. And so these trips that you made occasionally up above Grassy Point they were just pleasure trips, or somethink like that, I mean with the first three tugs? A. No, sir, always go up on some business. We took up a few boom sticks, or a scow-load of provisions or something of that kind.

Q. *But only once or twice a year?* A. *That is all.*

Q. And you don't remember definitely how many times but it was very seldom? A. *Very seldom, because they kept me busy down in the harbor all the time.*" (See p. 592).

The above shows his lack of familiarity with the disputed territory. But that is not all. Again, he testified:

"Q. You never tried to go through any channels except these two that you speak of, one hugging the Minnesota shore and the other what you call the cut-off? A. *Yes, that is all.*

Q. So you didn't test the depth of the water anywhere else? A. *No, sir. I used to get on the bottom quite often.*

Q. You used to get on the bottom up above Grassy Point? A. *Yes, it was a bad place; if you didn't watch out you would get aground.*" (See p. 592).

Again, he testified:

"Q. And I suppose you never paid any attention as to whether some of them, instead of taking the cut-off, would go on the north channel? A. *No. We would hardly ever meet anybody up there.*

Q. *But you were hardly ever up there at all?* A. *No, sir.*

Q. *So that you never paid any attention particularly?* A. *No, sir.*" (See p. 593).

Again he testified, on cross-examination, showing that his only experience in the "Millford" channel was after the dredging was done in 1893 because he never found less than twelve or fifteen feet of water:

"Q. Now, as I understand it, you never found any bar at all in what you call the old channel, that interfered with your navigation? A. *No, never did.*

Q. *You never found less than* 12 *to* 15 *feet of water if you kept in the channel?* A. *No, sir, never did.*

Q. That is, going up around, as you term it, where the Carnegie Coal dock is and the Zenith Furnace Company? A. Yes, sir.

Q. *And there was no point had ever less than* 12 *to* 15 *feet of water?* A. *No, sir, not if we kept in the channel.*

Q. *You found no place that had only eight feet of water when you navigated?* A. *No, sir.*" (See p. 595).

Of course, if this is true that he never found less than 12 to 15 feet of water in the "Millford" channel going up around Big Island, it is a demonstration that he could not have gone up there until after the dredging was done in 1893 because the soundings on the Government maps conclusively show that the shoal water was only eight feet deep.

J. H. DARLING.

The next witness that was called by the State of Wisconsin was Mr. Darling. His testimony is found at page 596 of the Record. He was an old man that was retired as an engineer

and had been in the employ of the United States Government for a good many years. He testified with reference to his connection with Government work:

"A. As principal assistant engineer on the work of harbor improvements in the Duluth-Superior harbor and in the other harbors of the Duluth district, so-called, extending over a large part of Lake Superior." (See p. 596).

He has not been in active service since 1913, having retired in the fall of that year. The old gentleman testified that he was familiar with the channel that was used by the navigators prior to the time that the "new channel" was dredged, known as the "Minnesota channel" (see p. 597). This channel, of course, was dredged in 1900 to 1902, and then he testified:

"Q. How long have you been familiar with that? A. I have been familiar with it during all of these 33 years." (See p. 597).

This witness was very tenacious of his opinions, but his evidence showed that he was totally mistaken as to where the channels were, i. e. the channels that were used by navigators in commerce prior to the time that the dredging was done in 1893. He said with reference to the limit of the draft of boats prior to the time of dredging:

"A. I think the draught up there was limited, before the shoals were removed, was limited to perhaps eight or ten feet. It might have been even a little less than that over some of those bars.

Q. Were there bars removed? A. There were bars removed at one time in the '90's; I don't remember the exact

year although I attended directly to that work.

Q. And the purpose of removing them was what? A. To add greater draught of vessels using that channel and allow the business of transporting lumber and cedar poles and so forth.

Q. From what point? A. Down the river from New Duluth and to facilitate passenger traffic, whatever traffic there was up that way." (See p. 597).

He could not remember where the bars were or when they were dug out (see p. 597).

Again, he testified:

"Q. As I understand all of the boats of larger draught that went up the river previous to that time followed that old channel? A. Yes, sir.

Q. Now, Mr. Darling, when were the first changes made of navigation from the old channel, was it at the time this new so-called Minnesota channel was dredged in 1902? A. Yes, sir." (see p. 598).

That the old gentleman was mistaken in this, there cannot be the slightest doubt, because the first change was made in 1893 when they dredged out the shoals so that a boat drawing ten or twelve feet could come down the "Millford" channel. He testified on pages 604 and 605 as to the conditions at the Sault Ste. Marie locks and the rivers and found himself badly mixed on the conditions there. In fact, it is very noticeable from his testimony that his age was telling badly on him. He testified as to the lowest depth of water in what was called the "Millford" channel as follows:

"A. There is a depth, the lowest depth of apparently near 8 feet.

Q. How much under 8 feet? A. To be exact 7.9." (See p. 605).

Again, he testified:

"Q. And at that time the depth of water in the original channel was only possibly a trifle under 8 feet? A. That is at a low stage of water, what we call low water.

Q. We will call that then at the lowest stage of water, is that right? A. Yes, sir." (See p. 606).

Again, he testified:

"Q. Now then up to 1891 would it be fair to say that boats drawing more than 8 feet of water would have difficulty in using that channel? A. *Yes, I should say so.*" (See p. 606).

So we see by the testimony of Mr. Darling, if it is to be relied on, boats drawing more than eight feet of water up until 1891 could not go up the old "Millford" channel as far as Big Island, and, of course, this condition continued until 1893 when the dredging was done. We want to ask the Court this question: If it is a fact that boats drawing more than eight feet of water could not use the "Millford" channel to go up above Big Island, why should boats use the "Millford" channel when they could take the direct route from Grassy Point over the "main, navigated and navigable channel" from G to B, as shown on Minnesota's Exhibit 1 and find the same depth of water, or at least as deep water, as the shoal water in channel H and save the long way around? It seems to us that this argument is unanswerable and supports the testimony of the witnesses called for Minnesota in a way that cannot be overcome.

Along this same line, he testified:

"Q. I think you testified that boats with small or slight enough draught used the cut-off channels? A. Yes, they did sometimes.

Q. Well, what would induce them to use that channel? A. A saving in distance.

Q. So that if the depth of water was sufficient the boats would always use the cut-off channel, would they? A. They would generally, I should think, but there is the one other fact which might have a bearing on that. There is a very sharp bend in the cut-off channel at one point which might bother a long vessel in making the turn.

Q. But would you not say that exclusive of any question of turns that the boats would always take the shortest channel if they had the depth of water? A. *I should say so, that is boats bound up the river.*" (See p. 606).

He then testified that he was not familiar with navigation at the time the State of Wisconsin was admitted into the Union, nor for some period of time thereafter. In fact, he stated he did not come to Duluth until 1884.

We wish to call attention to the testimony of Mr. Darling, wherein he attempted to describe the route that was taken by boats after they got westerly of Grassy Point to take the Cut-off channel. He was handed Wisconsin's Exhibit 1 and was told to make a mark describing the channel he testified to:

"A. That is the island there. In a general way, as near as I can recollect, when we wanted to take that cut-off channel we would leave the main channel and proceed something like this.

Q. Now you have drawn a black line leaving the red letter H, leaving that line at the southwesterly side of Graasy Point and then passing westerly to the southerly side of Armstrong Island and continuing around the southerly side of Big Island and around the sharp turn which is

known as the Devil's Elbow where you connect with the main channel which is marked with black ink, marked D? A. Yes, sir.

Q. Where the black line leaves the red line H witness has designated that point with the letter D, is that right? A. Yes, sir.

Q. Now, as I understand your testimony you think the navigators took that course because it was shorter when their boats were of light enough draught to enable them to pass through that channel? A. That is it, yes, sir, I should say so." (See p. 610).

Calling attention to this line on Wisconsin's Exhibit 1, we contend that the testimony of Mr. Darling on this point is impossible. The line he points out runs through shoals three or four feet deep only, and there was no channel there, and he is the only witness that attempted at any time to claim that boats of any draught traversed such a route. That he was absolutely mistaken, there can be no doubt.

The cross-examination of Mr. Darling at pages 612 and 613, while showing him very tenacious of his point, demonstrates his absolute lack of practical knowledge of where the navigators actually went prior to the time that the dredging was done in 1893.

Mr. Darling was then shown Wisconsin's Exhibit 46-C, being one of the Meade maps and also shown Minnesota's Exhibit 1, being another of the Meade maps, and was asked to trace the channel marked in red A-G-B-C, being what is claimed as the "Minnesota" channel, and to compare the depth of water as shown by these Meade maps in the channel marked A-G-B-C and the shoal places in the "Millford" channel, and he testified as follows:

"Q. I show you Minnesota Exhibit 1 and ask you whether the red line passing from A-G-B-C is not substantially the line which you have testified would give you eight feet of water as shown by Wisconsin Exhibit 46-C? A. It is substantially the same.

Q. And it would save more than a thousand feet, wouldn't it as against the detour line which is described as the main channel? A. I should think it would save about a thousand feet.

Q. Now assuming that you are correct in your testimony that the navigators took the short cut to save distance, why isn't it logical to say that the navigators would take this one to save distance, in view of the fact that it is just as deep water as the main channel? A. I want to say here that my recollection is that at the time, in the time I was acquainted with the river and was working there, along in the '90's, *I found what was shallower water than that exhibit shows.*

Q. Than the Meade map shows? A. Yes, the map we were looking at. I don't think there was eight feet running then.

Q. In the '90's? A. Yes, but I remember in the vicinity of that bar near the red line, that first line to the westward of Armstrong Island, along in the vicinity of that there was a shallow bank on each side of the channel which was hard to get across with a moderate size launch, shallower than what is indicated there. *That shows deep water, there is eight feet or so.*

Q. *The Meade map shows that?* A. *Yes, that shows that.*

Q. Having in mind that the state was admitted in 1848 and navigation began shortly thereafter have you any reason to believe that the Meade map was not correct in the '50's and '60's? A. I think it was correct at the time it was made.

Q. In the '50's and '60's? A. At the time it was made I think it correct.

Q. If that was so, in your judgment, would you say that it was probable or improbable that when navigators wanted more than eight feet of water they used this channel which has been designated on Minnesota Exhibit 1 as A-G-B-C? A. If I understand your question correctly you mean to ask why they didn't use it?

Q. *I mean to ask this, in the early days when the boats that were used did not exceed eight feet in depth is it not probable that they took this cut instead of using the detour that was made by the old main channel?* A. *I should think it was probable.*

Q. If the Meade map was correct, and you say it was correct, isn't it probable that they took that short-cut? A. *I should think it was. I should think those who knew of it would use it, I would do it myself.*" (p. 614).

This testimony is extremely significant. Indeed, there is nothing in Mr. Darling's testimony that is so significant and illuminating as this. He is the only witness that attempted for a moment to question the accuracy of the Meade survey, and even he did not question the accuracy of it at the time it was made, but said in a most vague manner that later on there was some little filling in at some place and he couldn't tell when or where (p. 613). But he frankly says when pinned down to the facts that he could see no reason why the navigators in the early days did not use the channel A-G-B-C, that had a continuous depth of water of eight feet when the shoal places in the "Millford" channel were no deeper than the continuous depth in the channel A-G-B-C. He even went so far as to state that he thought it was very probable that they did use that channel and even said *he himself would have used it* if he had known of it, and if he had been a navigator at that time. While the old gentleman argued strenously for his point, he was compelled to admit in answer after answer that he could see no reason why the "Millford" channel prior to 1893 should be used in preference to the straight channel marked A-G-B-C (see pp. 614, 615).

On his further cross-examination, he was asked:

"Q. Did you ever take any soundings for the map? A. No, sir.

Q. You are an office man? A. Yes, sir.

Q. *You are not a navigator?* A. *No, sir.*

Q. *Never navigated a boat in your life, did you?* A. *Not to speak of.*" (See p. 616).

Again, he testified:

"Q. *Now you never navigated these waters above Grassy Point yourself, did you?* A. *No, I have not.*

Q. Referring to this Meade map, Minnesota Exhibit 1, I want to call your attention to this red line marked on this map from A to G, G to B and B to C, which has deep water, not less than eight feet at any point, which you tell us was so in testifying about the Meade map, Wisconsin Exhibit 46-C, now I want to state to you in the way of testing your confidence in your opinion, that I think about twelve different navigators such as Mr. Merritt, the two Merritts, Leonidas and Alfred, Mr. John Howard, Ben Howard, Mr. Norton, Mr. Brewer, Captain McDougall and Captain Stevens testified that from the time they started to navigate up until the dredging was done of this bar to the north of the point marked C on this map, they invariably when they wanted to go up the river took the channel running from A to G, B to C, whether they went by the channel to the north of Big Island or whether they went by the channel to the south of Big Island, now do you know whether or not when those gentlemen testified that that is the way they invariably navigated those waters above Grassy Point, whether that is true or not? A. *I wouldn't doubt their testimony at all.*

Q. *You would think these men would know more about the way they went than you would?* A. *Oh, yes, sir.*

Q. *You would agree with their testimony?* A. *Yes, sir.*

Q. *Yes. You are an office man and have been for years?* A. *Have been, yes, sir.*

Q. *And you wouldn't want to say from what little observation you had from any navigation that those men were not telling the facts?* A. *Oh, no.* My own experiences in the government boats have been around the main channel except when we occasionally went across to the shallow channel of the cut-off over here. That is where I was accustomed to go when we went up the river *and I wasn't aware of this other channel that you have been speaking of.*

Q. *Well, if these men testified that they used it you wouldn't doubt it would you?* A. *Oh, no, not at all.*

Q. *And if this channel shown on the Meade map as testified to had not less than eight feet of water at any point there would be no rushes or reeds there, would there?* A. *I don't think there would.*

Q. Now do you know as a matter of fact that the only purpose in the early days, that is, prior to 1885 say, that the only purpose of using this channel running from G to H on Minnesota Exhibit 1 was to go up to a little point called Millford, do you know anything about that? A. *I am not familiar with Millford by name.*

Q. Never heard of it even. A. No." (See pp. 617, 618).

Here it will be seen that Mr. Darling in a very few words admits that these men of unqualified reputation and standing who testified for Minnesota undoubtedly knew a great deal more about the channels than he did, and that he would not question their integrity or their testimony in the least. He testified further on his cross-examination that while he knew there was a channel as shown on Minnesota's Exhibit 1 running from E to F, yet he was not familiar with it and never went over it, but he would not deny for an instant that it was there and that it had been used.

He further testified with reference to his lack of practical knowledge concerning these channels as follows:

"Q. *As a matter of fact you were not personally up on those waters once a week, were you?* A. *I don't think it would average that.*

Q. *You wouldn't average once a month during the summer?* A. *No.*

Q. Well, you didn't personally know a great deal of what was going on outside of your reports and your maps? A. Oh, I wouldn't know all about it, I would know some of it from what I saw and heard. I was working more or less around there but *I wouldn't be as familiar with those channels as these navigators who were actually running boats up and down.*

Q. Then if they testified to that fact you would think, would you not, *that you might be mistaken?* A. *Yes, that is true.*" (See p. 618).

As a matter of fact, we think that this testimony establishes that Mr. Darling was thoroughly convinced before he got through with his cross-examination that he was entirely mistaken about the location of the "main, navigable and navigated channel" in the early days before the dredging was done.

Again, he testified as to his work and familiarity with these waters in question as being much greater after the year 1892 than it was prior to that time:

"Q. *And since* 1892 *you have had more to do with these water in question with this bay than you did before?* A. *Yes, sir.*

Q. In 1892 there came a demand from New Duluth on account of some sawmills being located there, '91 and '92, to make a channel that would allow them to bring down their barges drawing about twelve feet of water, you remember that don't you? A. I don't remember just the depth.

Q. Well, bring down those barges of lumber? A. They wanted greater depth of water.

Q. *That was the first demand for deeper water?* A. *That was the first.*

Q. You went to work, the government did and improved the river or bay by digging out, dredging out this shoal to the north of C marked on Exhibit 1, that was in '93, was it? A. That, I believe, was in '93.

Q. Well, that is the beginning of the navigation of this channel. Now, isn't it a fact, this channel which is marked H or don't you know what the fact is in regard to that? A. Do you mean that was the beginning of navigation?

Q. Of the real actual navigation by boats of that channel, after you dredged out a channel so it could be used, and prior to that time, as testified by all these navigators, they went along the channel marked A-G-B-C or are you prepared to say which way? A. *I am not prepared to say either way."* (p. 619).

Does his testimony require extended discussion to show that it is not to be compared in accuracy with the testimony of the captains who actually navigated these waters in the early days? We think not. But we wish to call the attention of the Court to a little more of his testimony on this point:

"A. I do not dispute the testimony of these men, that they had deeper water in that channel or that the Meade map shows it; at the same time when I was making soundings over that bar for the purpose of improving it I remember running onto a shallow margin of the channel in that locality which would prevent a vessel crossing it of any depth, I should think it would be not more than three feet of water in that time I mention on that bar.

Q. Well, you don't mean there is only three feet of water from the point B to C as shown on Exhibit 1, do you. If you do we will get the original Meade map here. A. There might be change since that Meade map.

Q. Well, we are not talking about possibilities. A. At least I found from my own observation on that bar near C I remember distinctly finding a shallow margin to the channel which *I cannot exactly locate the extent of now but I remember that shallow water very clearly.* I know that a vessel drawing six feet couldn't cross. *I don't mean to say that there might not be deeper water in this vicinity which they could cross.*

Q. Now let me call your attention to this, that bar you speak of as being near point C, *that was several hundred feet distant from point C, isn't that true, Mr. Darling?* Now look at this map, Wisconsin Exhibit 46-C which shows this bar several hundred feet distant from the juncture of this channel running from B to C. Here is C on that map. You see there is deep water running up here all the way? A. *Yes, sir.*

Q. *You certainly didn't strike any bar in nine or ten feet?* A. *Your C is quite a distance over but that bar is—*

Q. Several hundred feet from C, isn't it? Wouldn't you say several hundred feet? A. That is several hundred feet further down. *I must say that my shoal water I discovered is evidently not on the line of this red channel on Exhibit* 1." (See p. 620).

Here Mr. Darling admits that he is entirely wrong in trying to put a shallow bar in the channel marked red on Minnesota's Exhibit 1. Mr. Darling was further asked concerning the Bayfield chart, and he testified as follows:

"Q. There is an exhibit here called the Bayfield chart. Are you familiar with that? A. Yes, I am to some extent.

Q. It is marked on the face a track survey. What does a track survey mean? A. I have not seen that term used, Judge, except on that map, but I know it is there and I take it to *mean a survey of the course followed by pilots in navigating the water, bay.*

Q. Well, do you know anything about that chart, how it was made? A. I don't know positively any more than I

can gather from the chart itself," etc. (p. 623).

He further testified with reference to the accuracy of this Bayfield survey as follows:

"Q. *Well, that was a chart that was used by navigators until they got the Meade map, wasn't it?* A. *Oh, yes, it was accurate enough for the purpose in those days.*

Q. *I say it was used by navigators until they got the Meade map, wasn't it?* A. *Oh, yes, that is true.*

Q. *The only one they had?* A. *Yes.*" (See p. 624).

To sum the testimony of Mr. Darling up, it amounts to this, that he would not for a minute contradict the testimony of the many captains and pilots who testified for the State of Minnesota that the "main, navigated and navigable channel" of commerce up until the dredging was done in 1893 was the line marked A-G-B-C on Minnesota's Exhibit 1. When the testimony of Mr. Darling was finished, we think it was by all odds testimony greatly favoring the claims of Minnesota, insofar as it was applicable at all. Of course, he had no practical knowledge of any kind with reference to the time that was material and important on the issue here. It was perfectly clear that the Government had decided to improve "Millford" channel in 1893 and Mr. Darling was determined, if he could, and no doubt honestly, to back up this judgment by claiming that that was the main channel; but we take it, that the fact that the "Millford channel" might be easier improved or easier deepened would not in any way affect the state line that had been located upon the "main channel of commerce" at the time that the State of Wisconsin was admitted into the Union and for 50 years thereafter. We perhaps should not criticize Mr. Darling for attempting to back up his judgment in this way, and in fact, we do not criticize him. He was an old gentleman that in his time was a good engineer

and did his work faithfully and well. His testimony establishes that he did not become interested in or familiar with the waters above Grassy Point until the Government decided on improvement which was the year 1893.

J. W. NELSON.

The next witness called by the State of Wisconsin was J. W. Nelson, and his testimony is found on page 625 of the Record. Just why they called this man, we have never been able to figure out, unless it was on account of his tenacity and stubbornness in sticking to a point, of which he knew little or nothing. He had lived in Duluth for forty-seven years. His business was that of *selling stationery, paper and books.* He also had been an Alderman of the City of Duluth. To what extent this added to his qualification as a navigator or mariner, we have not been able to figure out as yet.

It is true he testified and admitted that he had hunted and fished on these waters every now and then since 1870. He says:

> "A. In the early days of Duluth I was, as I am now, always interested in outdoor sports and our main sports were up the St. Louis River for hunting and fishing and so forth.
>
> Q. How frequently would you go up? A. In those days probably twice a month.
>
> Q. Someone go with you? A. Yes, sir; wouldn't go alone.
>
> Q. How would you go up? A. Most of the time in the beginning went with sailboats from Duluth.
>
> Q. Your sailboat? A. Yes, sir.

Q. How much water would these sailboats draw? A. Well, I had two sailboats; one would draw about three feet and another one would draw about six feet with the centerboard down; two feet without the centerboard." (See p. 626).

In other words, he could go anywhere he pleased over this entire bay regardless of channels, shoals, or anything else. He then goes on to detail his prowess as a fisherman and a hunter and his seeking after pleasure on excursion boats at different times and in different years up and down the bays in question. He was able to tell of a number of boats that navigated these waters in the early days and to tell the names that were painted on their sides (see pp. 627, 628 and 629). He also stated that he knew the "Cut-off" channel from the other channels (see p. 629).

On cross-examination he testified concerning his qualifications:

"Q. Now, you didn't pretend to be a navigator up those waters, did you? A. Some, yes.

Q. Well, ran a sail vessel? A. Well, sometimes I think I am just as good a navigator as people that have papers.

Q. You think you are? A. Yes, sir.

Q. Have you ever had papers? A. I never applied for them.

Q. You never ran a steam tug, did you? A. No, sir.

Q. Did you run a gasoline launch? A. Yes; I can run a gasoline launch.

Q. You have run a gasoline launch? A. I have one.

Q. *And you are a hunter and a fisherman?* A. *Yes, sir.*

Q. *That is your hobby, is it not?* A. *Yes, sir.*

Q. *And you sell sporting goods?* A. *I do.*

Q. You never navigated any of these boats that you have spoken about, the Free Trade or Stillman Witt. A. *Not as an officer.*

Q. The Free Trade never drew over three feet of water? A. Both the Stillman Witt and the Free Trade was shallow draft boats.

Q. *The Free Trade never drew over three feet of water?* A. *I don't know as to that.*

Q. And the Stillman Witt never drew over four feet; isn't that true? A. She's a very shallow boat, yes, sir." (See pp. 630, 631).

The above testimony does not inspire one with confidence as to the qualifications of this witness as a navigator and as to his accurate knowledge of the channels in the disputed waters. He and the witness Darling were about on a par when it comes to knowledge of navigation, and he and Mr. Darling could not agree at all upon the channels marked out by Mr. Darling.

He testified:

"Q. I want to call your attention to Mr. Darling's lines, the black line and red line as shown on Wisconsin's Exhibit 1, and where he started off from his black line marked D, from his red line marked H. Now Mr. Nelson, you never saw any boats take that line, that wanted to take the cut-off, go up that far before striking off on the cut-off, did you? A. *No, because there was bullrushes there.*

Q. *I didn't ask you because; but you never did, did you?* A. *I don't think I ever did.*" (p. 631).

We must say that we think that from an examination of the

soundings of the maps in evidence, Mr. Nelson was right in contradicting Mr. Darling directly on such a channel, and indeed, Mr. Darling, as we understand it, finally abandoned his contention entirely on this proposition.

He testified further on this point, however:

> "Q. *And you think Mr. Darling was mistaken when he drew that as the channel, when they wanted to take the cut-off, don't you?* A. *I think so.*"... (p. 631).

Mr. Nelson had to admit that he knew of the channel A-G, G-B and B-C, and that small boats took it as shown on Minnesota's Exhibit 1 (p. 631).

Mr. Nelson, the sporting goods man, was asked concerning these different channels on pages 632 and 633 and his answers showed that he knew practically nothing about them. He simply had traversed the bays in his sailboats, hunting and fishing with his friends, and had at other times braved the dangers of navigation from the deck of an excursion boat. He became greatly confused in trying to find shoal water that he claimed existed in the Minnesota channel, as shown on Minnesota's Exhibit 1. See his testimony on pages 633, 634 and 635.

We think it hardly worth while to spend any further time with his testimony, as it was shown to be nothing but the superficial and frothy statements of an egotistical witness, who knew absolutely nothing about navigation from the standpoint of a pilot, but merely was familiar in a general way with these waters from potting ducks and catching bullheads and catfish which abound in these waters, and riding, as said before, on excursion boats for pleasure.

MARTIN COLE.

The next witness called by the State of Wisconsin was Martin Cole. He had lived in Duluth for forty years and was at the time of the giving of his testimony Deputy Labor Commissioner for the State of Minnesota. His testimony is found at page 642. He obtained his license as a pilot twenty-eight years before and was captain on the tug Agate at one time. In the early days, however, he did not go above the Ohio Coal Dock property (see p. 643). Concerning his limited experience above Grassy Point, he testified as follows on direct examination:

"Q. Did you operate a boat above Grassy Point; have you at any time? A. *Yes, I have on several occasions.* I towed vessels up there, some of the first vessels that *went up to New Duluth to load lumber;* towed them up and brought them down after I loaded, some of them; there was other men working in the same line.

Q. Were you acting as captain of the boat? A. Of the tugs, yes. I was then working for B. B. Inman.

Q. Did you do that more than one season? A. No. I only towed boats up there one season; that is, up to New Duluth.

Q. What was the capacity of the boats that you towed up there that season, what depth of water? A. *Well, loaded they would draw about eleven foot six up to twelve feet.*" (See p. 644).

It is perfectly clear from this testimony that he did not do any towing up here until after the dredging was done in 1893. Boats with 11 foot draught did not go up this bay until dredging was done. He continued this testimony concerning what was done from 1896 on. We objected to this on the ground that it was immaterial and incompetent, as it cut no figure what channel was used after the year 1893 when the dredging was done,

as the state line could not be located by a man with a dredge. See our objection found on page 645, and we insist that the objection is well taken and should be sustained. There is no doubt whatever that after the year 1893 when the dredging was done, the deep draught boats came down what is known as the "Millford" channel. He admitted on his direct examination that he did not know anything about the channels that were used prior to the dredging, except that he had heard that light draught boats drawing six or seven feet of water or so could use the "Cut-off" channel, but he did not use it himself (See p. 648).

On cross-examination he admitted that prior to the time of the dredging by the United States Government in 1893 he did no work of any kind above Grassy Point:

> "Q. *If I correctly understand your testimony you never did any work up above Grassy Point earlier than the year* 1894, *or the year of the Hinckley fire?* A. *No, I never did do any work there.*
>
> Q. Practically all the work that you have been testifying that you did coming down with these eleven foot boats was in 1896? A. 1896 *was the year I towed vessels around.*
>
> Q. And that was after considerable dredging had been done by the Government on this route you say you took? A. *Well, possibly may—I presume there must have been some dredging done.*
>
> Q. Prior to 1894 you were not familiar with the waters above Grassy Point? A. *Not above Grassy Point. My work was down here or down the lakes.*" (See p. 649).

We think it hardly necessary to spend any more time upon the testimony of this witness, as it is conclusive he knew nothing about the "main, navigated and navigable channel" in these waters prior to the time of dredge work being done in the year 1893.

FRED BENSON.

The next witness called by the State of Wisconsin was Fred Benson. His testimony is found at page 651 of the Record. He had lived in Duluth only twelve years. He had navigated vessels about forty years and had been doing work at the head of the Lakes since '88. He had held a pilot's license for forty years. We think it safe to say that the sum and substance of his testimony amounts to this, that prior to 1893, the time when Government dredging was done, he did no work of any consequence above Grassy Point, and the little he did he used the "Cut-off" channel and the "Minnesota" channel entirely except as he went in the "Millford" channel up as far as the Zenith Furnace Company docks and did not at any time use the "Millford" channel to go up around north of Big Island. His testimony, therefore, on the question of where the "main, navigable and navigated channel" was prior to Government improvement in 1893 is of no importance; but we will call attention particularly and specifically to some of the more prominent features of his testimony bearing out the statements we have just made.

He was asked this question on direct:

> "Q. Have you navigated the St. Louis River any above Grassy Point? A. I have.
>
> Q. To what extent? A. I towed nearly all the lumber out of there that was cut by the Richards Lumber Company of New Duluth, along through 1894 up to 1899 and 1900." (See p. 652).

Of course, neither the State of Minnesota nor the State of Wisconsin, nor this Court, is interested in what was done from 1893 on. He was asked on direct examination:

> "Q. Did you navigate the river any prior to 1894? A. Why, I made some attempts up there This firm that I worked for had a good deal of work up there, one kind and

another, and they rather encouraged my going up to see if I couldn't get up through there some way with a heavier tug than they were using. They had two little tugs that did this work mostly, and they used to send me up quite often with different tugs to investigate around and see if I could get a channel that we could go up with a heavier tug; they had the Cora B; I used to go up with her.

Q. How much water did she draw? A. I think about eight and a half or nine feet.

Q. Eight and a half? A. Well, eight and a half or nine feet; it would depend on how she was trimmed, of course.

Q. Were there two courses the boats took above Grassy Point going up the river? A. There was a sort of channel very light draught used to go up, they called it the cut-off.

Q. That is southerly of Big Island? A. Yes, have to leave Big Island to the starboard going up.

Q. And what channel did the heavier draught boats take? A. Why, they took the main channel of the river.

Q. From Grassy Point up? A. From Grassy Point up.

Q. What channel did you take in navigating the river above Grassy Point?

Mr. Hanitch: When do you refer to?

Mr. Gard: I will fix that later.

Mr. Hanitch: The question is objected to as indefinite, unless the witness states when he is talking about.

(Question was read by reporter: 'What channel did you take in navigating the river above Grassy Point')

The Commissioner: Answer the question by telling which side of Big Island you took.

A. *Well, prior to* 1893, '94 *what navigating I did was either in the main stream up as far as the furnace and no*

further or was in through the channel at the south side of Big Island or Zenith Island." (See p. 653).

This evidence establishes two things: First, that he practically did very little, if any, navigating above Grassy Point prior to 1893; and second, *that prior to* 1893 *he never attempted to go up the "Millford" channel further than the "Zenith Furnace,"* which is a point about opposite where Millford used to be, perhaps a trifle further up. He expressly says:

> "Well, prior to 1893, '94 what navigating I did was either in the main stream *up as far as the furnace and no further* or was in through the channel at the south side of Big Island or Zenith Island." (p. 653).

In fact, this witness so far as the testimony is material, corroborates the State of Minnesota in every respect, as given above. He further testified concerning the fact that he never went above Millford or Zenith Furnace as follows:

> *"Prior to* 1893 *I had been up this channel ('Millford channel') as far as the furnace with a schooner of limestone and supplies for the furnace but I had never made any attempt to go out through this bar near this little grassy island,* but there was some improving done about that time about 1892 or '3, along there in that little spot, I think they did some dredging and in looking around I found this way up, I used to go up that way.
>
> Q. What was the occasion of your going up to the furnace? A. Why, they had to have commodities up to the furnace, limestone, coal and supplies, different times, we would go up frequently with scows." (See p. 654).

There can be no doubt, therefore, that this witness never claimed that he at any time prior to 1893 ever navigated with

any kind of a boat on "Millford" channel above the Zenith Furnace dock which, as said before, is about opposite where Millford now is or a little above. This corresponds exactly with the testimony of the witnesses of the State of Minnesota that the channel used for navigation prior to '93 was the channel marked A-G-B-C on Minnesota's Exhibit 1, whether navigators went north of Big Island or south of Big Island through the "Cut-off."

This witness then details how he towed the lumber which was all done about 1893 or after. On his cross-examination he clinched his direct examination in favor of the State of Minnesota as follows:

"By Mr. Fryberger:

Q. Now, Captain, as I understand, you didn't attempt to bring down any of these barges of lumber drawing twelve or fourteen feet or to haul lumber at all, until after the year 1893? A. *I couldn't state exactly the time, but I think it was after* 1893.

Q. Well, you stated in your direct examination that it was '94 you started. A. Well, about '94, '93 or '94, I couldn't say exactly the date. I am inclined to think I started along late in the fall of '93 and brought down lumber.

Q. Well, that was after they had done the dredging up the river? A. *Well, part of it had been done; they did more dredging after I had been towing.*" (See p. 656).

In speaking of this "Millford" channel, which the attorneys for Wisconsin loved to call the "main channel" and which they never failed to refer to as the "main channel" unless it was by mistake, this witness testified:

"Q. And mariners never attempted to come down there at night, did they, until this channel had been im-

proved? A. *I don't know whether they ever attempted to or not. If they attempted to they never did.*" (p. 656).

So taking the judgment of this witness this "Millford" channel prior to improvement by dredging was a mighty poor channel for navigation, although he admitted that he had never navigated or attempted to navigate it above the Zenith Dock, or what was formerly a point near Millford until the dredging was done, as aforesaid.

So far as the testimony of this witness is concerned, it was in our opinion far more valuable to the State of Minnesota than it was to the State of Wisconsin. The sum and substance of his testimony was that prior to 1893 whenever he went up above Grassy Point, he always took the G-B channel and the "Cut-off", or else he went up the "Millford" channel simply as far as the Zenith furnace and never attempted to go over the shoals in that so-called "Millford" channel.

J. P. BURG.

The next witness that was called by the State of Wisconsin was J. P. Burg, and his testimony is found on page 662 of the Record. As a preface to a discussion of the testimony of this witness, we think it well to say now and here that we can see no reason why the State of Wisconsin saw fit to call such a man as a witness to aid the Court in determining the channels in the Bay in question. It is true he counted one and went to swell the number of witnesses called by the State of Wisconsin; he also was a member of the memorable party that went up the River on the scow or boat just previous to the time that his testimony was given, but his evidence showed that his memory

was worthless and that he never had any knowledge of any consequence of the situation.

He was born in Superior and lived there twenty years and then moved to Duluth and lived there thirty or thirty-two years. *He was a retail grocery clerk and had been clerking in a retail grocery store in Duluth for nine or ten years.* (See Record p. 671). He testified to his boating and fishing as a boy on the bays at the head of Lake Superior and that his father had a homestead near Grassy Point at one time (see p. 662). He stated that he started to fire on tugs when he was twenty-one years of age (663), but he never had charge of the navigating of a vessel or tug, and never was either master or pilot.

Then he testified that in *1878 or '79* he went up upper St. Louis Bay beyond Grassy Point as far as Fond du Lac on the steamer "Ossifrage" on a passenger excursion. He was asked:

> "Q. How many times did you go up on that steamer? A. *Oh, I suppose probably a dozen times, ten or twelve times.*
>
> Q. *During what years?* A. *I think that would be 1878.*
>
> Q. Well, did you travel that many times upon that steamer that one year? A. *Yes, sir. That is about, you know; I ain't definite on that.*
>
> Q. How much water did that boat draw? A. About nine feet.
>
> Q. How many passengers did she carry? A. *She carried a lot of passengers, a couple of thousand all that could get on. She was a big boat.*" (See p. 664).

That he was mistaken in this testimony there cannot be the slightest doubt. The steamer Ossifrage never came to the head

of the Lakes until 1888 (see Captain Inman's testimony, p. 963). *Not only did the Ossifrage not go up the water in question in '78 and '79, but she did not go up these waters in '88 or '89 when she first came to the head of the Lakes.* Indeed, she was a boat that drew around *ten or twelve feet of water* instead of nine, as he testified to, *and it would be impossible for her to go as far as Big Island prior to the improvement of the channels by dredging in '93.*

Captain Inman testified:

"Q. Where did you bring it (Ossifrage) from? A. Bay City.

Q. What draft boat was she? A. *I don't remember exactly, somewhere between ten and twelve feet.*

Q. *Had she ever been up here prior to* 1888? A. *No, sir.*

Q. *Your company bought her?* A. *Yes, sir.*

Q. There has been a man testified for the State of Wisconsin, by the name of Berg, and I am not sure but other witnesses testified, but this man testified that in '78 he went up the St. Louis Bay, went up as far as Fond du Lac on the Ossifrage, is that true? A. *The man is mistaken.*

Q. *Did the Ossifrage ever go up as far as Fond du Lac or above Grassy Point during* '88 *or* '89, *when she was here?* A. *She did not.*

Q. *Could she go up?* A. *No, sir.*

Q. *Prior to the time the dreidging was done in* 1893 *it would be impossible to take that boat—* A. *Yes, we considered it so.*

Q. *Did you know where your boats were all the time?* A. *Yes, sir.*

Q. *It was part of your business?* A. *Part of my business."* (See p. 963).

So we see that the testimony of this retail grocery clerk about going up on this boat that *drew ten or twelve feet of water* "probably a dozen times" in the year 1878 was not only untrue, but it was foolish, because it was impossible for a boat of that draught to go up these waters until after 1893.

Returning now to the testimony of the witness Berg, will say that he devoted his time to detailing the different engines he ran on different tugs. It is no doubt true that this witness probably *went up the bay on the Ossifrage after the improvements were made in* 1893 *and after she had been bought by the Smith-Fee Company.* No doubt this grocery clerk traveled *on this boat after* 1893 *on the "Millford" channel and made up his mind that that was the main channel.* The witness further testified on pages 665 and 666 as to his traveling around on tugs that were picking up logs and "bumping the bumps" on the bottom, but so far as attempting to locate definitely any channel, his testimony was an absolute failure.

On cross-examination he testified with reference to what he did while sailing:

"Q. Now you used the expression that going up westerly of Grassy Point you presumed they followed the channel. Now you meant by that, I take it, that you were not navigating the boat yourself. A. *No, I was not.*

Q. *You were not navigating it?* A. *No, sir.*

Q. *And because you got up the river, up to Fond du Lac, you presumed you followed some channel to get there?* A. *Yes, sir.*

Q. *But you did not pay any particular attention in those days to the channel yourself, that is you were not navigator?* A. *No, I wasn't navigator.*

Q. *And you just concluded in a general way that you must have followed some channel in order to get up there?* A. *In order to get up there, yes, sir."* (See p. 669).

We hardly think it necessary to spend much more time on the testimony of this grocery clerk, who formerly was an engineer on a tug and who confessed that he knew practically nothing of the channels that were used and that he was not a navigator.

He admitted on his cross-examination that he did not start to run up these waters in any capacity, except as a boy, until about '87 (see p. 670), and that he did not become an engineer until 1890 or '91 (see p. 670), so it well may be that this witness was mistaken by two or three years as to the time when he did navigate these waters as an engineer, conceding that he did at all. *A witness who was so badly mistaken as to testify that he went up on the steamer Ossifrage in '78 or '79, ten years before she came to Duluth and sixteen years before it was possible for this boat to navigate these waters, might well be mistaken as to the time when he acted as engineer, as aforesaid.*

The calling of such witnesses indicates the extremity of the State of Wisconsin for competent evidence. On cross-examination he admitted his ignorance concerning the Ossifrage, and in our opinion, demonstrated his mistake. He was asked:

"Q. *Don't you know that the Ossifrage drew between twelve and thirteen feet of water?* A. *No, sir.*

Q. *You don't know that?* A. *No, sir.*

Q. *How much did she draw?* A. *About nine feet.*

Q. *She was owned by the Inmans, wasn't she?* A. *Yes, sir.*

Q. *Captain Inman himself didn't come here until* 1885, *did he?* A. *I don't know.*

Q. *Well, don't you think the Inmans would know what kind of a boat she was and when she came here?* A. *Certainly.*

Q. *Doc Inman would know all about it, wouldn't he?* A. *Certainly.*

Q. And that as a matter of fact she drew between twelve and thirteen feet and never drew any less, isn't that true? A. No, sir.

Q. *Didn't that boat stay here two years and then as she didn't pay they had to get rid of her?* A. *I don't know that. She stayed about two years.*

Q. *And she didn't come back until the World's Fair year?* A. *Yes, she came back.*

Q. And Ned Smith and John Fee got hold of it? A. Yes, sir.

Q. And tried to run it between Duluth and the World's Fair, that is, Chicago? A. Yes, sir." (See p. 672).

He concedes that Mr. Inman would know all about it, and we called Mr. Inman and his testimony is referred to above. We will spend no further time with the testimony of the grocery clerk.

JOHN OJIBWAY.

The next witness called by the State of Wisconsin on this point was John Ojibway and his testimony is found at page 675 of the Record. He lives at the present time at Cloquet, was born at the head of the Lakes, and lived in the vicinity of the Lakes all his life. He was a half-breed and at one time worked around the office of the United States Marshal at St. Paul (See pp. 675, 676). He was 58 years old (p. 676).

He testified on direct:

"Q. What has been your business generally? A. *Generally commercial life you might call it,* get everything I could, do everybody I could, any work.

Q. Have you ever navigated boats any? A. Yes, That is, I have worked on boats, yes, sir.

Q. To what extent? A. In almost every capacity there is aboard a boat. I wheeled and fired and also ran the engine.

Q. Have you ever run boats on the St. Louis River? A. Yes, sir.

Q. To what extent? A. Well, by that question, how long, do you mean?

Q. Well, yes. A. Oh, several years.

Q. When? A. Well, now, the first experience was in the latter part of the '70's. Now I will give you instances and you can get your dates probably better from that. *My recollection of dates is very poor.* It was the year of the Hayes and Tilden election, the first year.

Q. That was '76? A. June 12th.

Q. It was the year of the Hayes and Tilden presidential campaign? A. Yes, sir.

Q. What were you doing? A. *I was working for a man by the name of Marty Wheeler up and down the St. Louis River towing scows of rock, delivering them down here at the Superior entry.*

Q. What boat were you on? A. The tug Amethyst.

Q. Now had you been on the St. Louis River prior to that time, before that time? A. Yes, in small boats, at one time I went up on the Mary Ann." (See p. 676).

There is on doubt but what this witness worked as a roustabout on the scow that was hauling rock and that was being

towed by Captain Martin Wheeler. Captain Wheeler had not testified for the State of Minnesota at this time, and no doubt it was thought that he would not be called as a witness, as he was not a resident of Duluth, but we find that the testimony of the half-breed does not correspond in any way with the testimony of Captain Wheeler as to the channels that were used. He testified that he used to go on excursions once in a while on the George S. Frost, a side-wheeler (see p. 677):

> *"Probably I went up in a season two or three times.* Q. *How many seasons?* A. *One season."* (See p. 678).

A great effort was made, as shown by the Record on pages 678 and 679, to show that this witness really was a navigator, but he never would come to the point of testifying to any such thing. As near as he got to it was to say:

> "A. Why, I wheeled, operated the boat up there several times when parties wasn't acquainted with the river.
>
> Q. Now have you been up there on any other boat? A. On an excursion, yes, sir.
>
> Q. When? A. After that." (See p. 679).

The sum and substance of his experience as a navigator was narrowed down, as we understand his evidence, to his experience as roustabout on the scow when working for Martin Wheeler. Then, he was asked concerning his part in the famous trip that he took with the thirty witnesses in care of John Bardon, about a week before the hearing, and he testified:

> "A. *It looks to me in my judgment it is across the old channel* (referring to Carnegie Coal dock and Zenith dock).

Q. You were up there a week ago last Monday, was it? A. Yes, sir.

Q. *Went up there to refresh your memory?* A. *Yes, sir.*

Q. Went up with some other people, did you? A. *Yes, I went up with Mr. Bardon and Mr. Powell and several Indians that was familiar with the old channels and some of the old settlers, pioneers at the head of the lakes.*" (See p. 682).

This witness testified that in the '70's and '80's the boats navigating these waters above Grassy Point generally ran in the "Millford" channel all the way up (see p. 684). In this he contradicted all the captains called by the State of Minnesota, and especially did he contradict the captain for whom he worked and who came down the channel on the tug hauling the scow on which this Chippewa Indian was working. On his direct examination, it is quite noticeable that his attention was not directed to his work with Martin Wheeler any more than was necessary. He went into little detail with reference to this matter, nor was his attention called on his direct examination to the different captains and navigators of these waters in the early days, but on cross-examination he was given full opportunity to detail his information concerning these matters, and it is quite instructive.

He was asked on cross-examination:

"Q. Do you know Alfred Merritt and Lon Merritt, I suppose? A. Yes, sir.

Q. And the two Howards, John and Ben? A. Yes, sir.

Q. And Captain Stevens? A. Yes, sir.

Q. And Captain McDougall? A. Which McDougall?

Q. The one that built the whalebacks? A. I do.

Q. And Mr. Brewer of the Duncan-Brewer Lumber Company? A. Yes, sir.

Q. And Mr. Krause? A. I don't recollect that I do.

Q. Lives up there at Fond du Lac? A. Yes, sir.

Q. And Mr. McManus, Charles McManus? A. I do.

Q. *They were all navigators up there in the early day, weren't they?* A. *I presume they were.*

Q. *They actually ran boats up there?* A. *I don't know that.*

Q. And yet you claim you have been all over these waters in those days and didn't know that? A. I have been up in those waters, yes, sir.

Q. And you didn't know they ran boats up there? A. Not to my recollection.

Q. Who ran boats there that you knew? A. Fellow by the name of Harris and Ed. Smith, Walter Burns and Martin Wheeler and Jack Jeffry.

Q. Those are the only ones you know? A. When I was there." (See pp. 693, 694).

It is hardly possible that this Indian did not know that these men were captains and navigators when they were practically the only men that were running boats there at that time. Of course, he did name Ed Smith, Martin Wheeler and Jack Jeffry, all of whom testified in the case and all of whom contradicted the testimony of Ojibway, including Ed Smith, the witness called by the State of Wisconsin, who got so mixed on his channels. The men by the name of Harris and Walter Burns were not accounted for. He thought perhaps they were dead.

Then he was taken in hand on cross-examination, and the details of his work with Martin Wheeler were brought out:

"Q. Now you were working for Martin Wheeler, weren't you? A. Yes, sir.

Q. How long did you work for him? A. Part of two summers. One summer first summer I went to work for him, along the middle of the summer; worked all summer, and I pretty near finished the season with him. As he got through the contract he was through.

Q. He was running the boat that you were working on? A. Yes, sir.

Q. And he had to do with the navigation; he guided the boat and picked out the channels? A. Yes, sir.

Q. *And of course the channel that you took was the channel that he picked out?* A. *It is the old channel.*

Q. *I say, the channel that you took is the channel that he went on?* A. *Yes, sir.*

Q. *And that is what you have been attempting to describe here, is the channel that he took, is it?* A. *Yes, sir. I have described.*

Q. Do you know where Harris is? A. No, I don't know. The man may be dead for all I know.

Q. Do you know where any of these other people are that you have spoken of? A. Mart Wheeler.

Q. Well, outside of him? A. The last I seen of Mr. Jeffry, Jack Jeffry, he was in Duluth.

Q. Well, outside of him; these other people, do you know where they are? A. Well, I don't, except Jack Shea." (See p. 694).

Then, he was asked further with reference to the channel he took when he was working for Martin Wheeler, as follows:

"Q. Just step down here a minute, will you. Calling your attention to Minnesota's Exhibit 1. You see where

Grassy Point is here, don't you, on this exhibit? A. Yes, sir.

Q. *Did you ever go up on the channel that is marked A-G-B-C when you were going up to Fond du Lac?* A. *No, sir.*

Q. *You didn't go on that route?* A. *No, not on that route.*

Q. *Don't know whether there was a route there or not?* A. *Not in my time.*

Q. *I say, you don't know whether there was or not?* A. *I don't.*

Q. *Calling your attention to the red line marked A-E-F-D, did you ever go over that route, or substantially that?* A. *Yes, sir.*

Q. *You have been over that route?* A. *Yes, sir.*

Q. *Was there a pretty good route through there?* A. *There was at that time.*

Q. *What time do you refer to?* A. *In the '80's.*

Q. *Did you very often go over that route?* A. *I did at that time.*

Q. Was that the route that you usually took in making what you call the cut-off? A. No, sir.

Q. What were you doing when you took that route? A. Go up and down the main channel.

Q. *Is that where you claim the main channel was?* A. *I expect it was, unless I am lost on that map."* (See p. 695).

By looking at Minnesota Exhibit 1 it will be seen that the channel A-E-F-D is a channel that runs far to the south of the Wisconsin side, and the witness simply did not know what he was talking about. *He was schooled on one thing, and that was to testify that he traveled the main channel and he testified as follows:*

"Q. Well, get yourself located. Here is Grassy Point.

Here is the island up here. A. *All the route that I ever was up on is the main channel.*" (See p. 695).

Counsel for the State of Wisconsin then used a great deal of time with the aid of the Commissioner trying to straighten out the witness on his testimony with reference to this channel (see pp. 696, 697).

The Record shows that the Bardons, John and James, of Wisconsin were extremely interested in this case, and the testimony of this half-breed shows that he would do anything he could to help his friends. He testified with regard to his relation to the Bardons:

"Q. How long did you go to school to Jim Bardon? A. One term.

Q. And you have been pretty well acquainted with him since? A. *Been like a brother to me. He is a man that has done a great deal for me.*

Q. *And you feel under a great obligation to him?* A. *I don't in a matter of business; a man I ask him a favor he always does it for me.*" (See p. 698).

Perhaps under all the circumstances, the poor half breed should be more pitied than blamed.

We want now to call attention to the testimony of Captain Martin Wheeler again, just briefly, to show that the half-breed Indian did not know what he was talking about when he said they always came down the "Millford" channel with the rock the two seasons that he was working for Wheeler. Martin Wheeler

stated, after testifying that he had navigated these waters for twelve or thirteen years commencing in 1868 and running until 1881, as follows:

"Q. What were you doing, master or wheelsman or what? A. First I was engineer and then after that I was master.

Q. What boats or tugs did you operate principally? A. The first one I was in was the Agate and the next was the Amethyst.

Q. What others did you run? A. Just those two during that time. I owned the Amethyst or owned an interest.

Q. Both of those were tugs? A. Yes, sir.

Q. And what business were the tugs engaged in principally? A. *Principally towing scows and booms of logs. Of course, there was towing along with it. Once in a while a barge or a vessel, but it was principally logs and scows.*

Q. *And was a very considerable part of your time during these* 13 *years engaged in operating between Duluth and up to, say Fond du Lac?* A. *Yes, a large part of it.*

Q. You did a good share of the log towing, I take it, up there? A. Yes, sir.

Q. *And you mentioned scows too. Were you hauling scows that had rock on them, stone?* A. *Yes, sir.*

Q. Any other materials? A. Wood, hay, lumber sometimes, brown stone.

Q. Where was that hauled from to, what point? A. *The first few years from Fond du Lac to the Superior entry for the Government piers.*

Q. You say from Fond du Lac? A. Yes, sir.

Q. There were stone quarries in Fond du Lac in those days? A. In the early days.

Q. Were you engaged with others who were navigating those waters, in a commercial way, during that time? A. Yes, sir.

Q. Was Alfred Merritt largely engaged in navigating those waters? A. He was master and I was engineer on the first tug at the Head of the Lake here in '68.

Q. And was Jack Jeffry, Captain Jack Jeffry, navigating those waters during a considerable part of that time? A. He started in '69. I went as master of the Amethyst and he was with me that season, and the next season; he was with me for several years as engineer and then went as master on the Nellie Cotton.

Q. Do you know whether he was there navigating down to 1881 and possibly after that time? A. Yes, sir.

Q. You knew Ben Howard and John Howard, did you? A. Yes, sir.

Q. *Now outside of those four that I have named, and yourself, that is Alfred Merritt and Jack Jeffry and the two Howards, was there anybody who navigated those waters in those days in a commercial way to any considerable extent?* A. *There was one or two more, but I don't think they are living. Captain Lutz used to run up there a good deal. He was in the Agate after we got it.*" (See p. 950).

Again he testified:

"Q. Now calling your attention to Minnesota's Exhibit 1 just before you here, what was the course usually taken in going after you passed Grassy Point up to Fond du Lac?

Mr. Gard: Objected to as not proper rebuttal.

A. As it appears on this map or as I would state it in my own—You mean using this chart?

Q. Yes. Indicate some way by the chart so that we can make a record, if you can—Meade chart. A. That is what we used to call the Government chart of the head of the lake, come out in '62 or '3.

Q. Yes. A. Yes, I am familiar with it. All you care for is below Grassy Point?

Q. Yes, at present that's what the question refers to; from Grassy Point on is what I mean? A. Well, here is the river coming down here and here is Grassy Point. We used to come up through the bay, then follow this water here (indicating). *This is a channel that wa-n't used very much* (indicating).

Q. *You are pointing now to the line marked A-E and crossing to the west around to F* (F was 'Millford' channel) *aren't you, that you say wasn't used very much?* A. *Very seldom. There was a channel up there. The course we usually took when we were going up the river to Fond du Lac we would come up here opposite this corner of the point; used to be a big clay bank in here, and then we used to have a little island here. This is it here, I think.*

Q. *That is called Snowshoe or Snowpuck or Pancake Island?* A. *I don't know what it is called. I never heard any name for it. We followed about the course marked here* (indicating) *to this line up here.*

Q. *You pointed now from A to G to B?* A. *Yes.*

Q. What course did you take from B on? A. In going up to Fond du Lac we used to generally take this here what is called the cut-off.

Q. That is the line B-D and then on? A. Yes. Going into this channel and through here.

Q. And south or east of Big Island? A. It is the way we generally went in doing our towing to Fond du Lac, and if we had anything over in here we used to take this other channel over here (indicating).

Q. What channel do you mean? A. *It would be this one to the right of this island. The dividing point would be about here. Is that B?*

Q. *Yes.* A. *That's about where, if they were going to the north of the island, we would go around this way.*

Q. *That is, if you were going to the north of the island*

you would go along the line B-C or substantially that? A. *Yes, about that. If we were going to Fond du Lac generally took what you call the cut-off channel.*

Q. *And you say that the most of the traffic was through the cut-off?* A. *Yes, sir.*

Q. In those days. Now when, if ever, did you go along the channel or white line in the center of which is the letter H—was that used? A. *If we had any towing to do that would originate in this bay, or if we wanted to go into Millford, we generally took this channel. Millford was located in there* (indicating).

Q. You say this bay— A. Used to be logs in there sometimes." (pp. 951, 952).

Again, he testified:

Q. *But otherwise if you were going up the river up to Fond du Lac you would take the line A-G-B-C, that is, if you were going north of the Big Island?* A. *Yes.*

Q. *And that line A-G-B-C, was that the line usually taken by traffic in those early days?* A. *Going on this side of the island?*

Q. *Yes, going on the north side of the Island?* A. *Yes.*

Q. And that was the line usually taken except when people were going through the cut-off; is that right? A. Yes, sir.

Q. *And does what you say as to the line of traffic apply as well to the traffic conducted by others, as yourself?* A. *As far as I know.*

Q. That was the customary course of travel? A. *That was the custom of the tugs that were running at that time.*

Q. *Can you give us some idea as to how many times as much commercial traffic went along the line A-G to B, we will say, as would go up the line or channel marked H, in those days?* A. *I should say at least nine-tenths of it went this way.*

Q. *Nine-tenths of it went along the line A-G-B?* A. *Yes, sir.*

Q. *And what went up the channel, so-called, marked H, was just what went up to the bay or went up to Millford?* A. *Very little went that way.*" (pp. 952, 953).

Now, then, we call attention specifically to what he had to say with reference to John Ojibway, the half-breed:

"Q. Now do remember a man, I think he is a half breed, I think the evidence here shows, called John Ojibway? A. We used to call him *John Chippeway.*

Q. Did he work for you at any time, work on the scow that you were hauling? A. Worked on scows; I don't think he was directly in my employ.

Q. *Did you haul scows that he was working on?* A. *Yes, sir.*

Q. *Hauling stone?* A. *Yes, sir. Wood too, I think; I wouldn't be positive.*

Q. *First I will ask you this: Would the same course be followed coming down the stream as going up?* A. *Yes, sir.*

Q. *And during that time, in hauling scows in which he was working did you take this course that you have indicated?* A. *Yes, sir.*

Q. *Didn't go around in this channel, so-called, marked H, except when you were going up to Millford or—* A. *No. I don't ever remember taking stone around that way.*

Q. Now, was the water as deep, that is the continuous depth of water as great, in this channel marked A-G-B-C, as it was in this half moon circle marked H; I say the continuous depth? A. Just ask that again.

Q. I say, was the continuous depth as great in the line marked A-G-B-C, which you usually took, as it was in the half moon line marked H? A. I couldn't say as to that. According to the chart, it is deeper this way. I never

sounded the channel as long as I had plenty of water going this way.

Q. *So far as you knew, was it as deep in this line A-G-B-C as it was around the other way?* A. *As I said before, I never sounded the channel, so I couldn't say. All I could go by is what I see here on the chart.*

Q. *Did you ever have any trouble in going up the line A-G-B-C with this craft that you were using in those days?* A. *No, there was plenty of water for us.*

Q. *You think, then, if Mr. Chippeway or Ojibway said that you towed him down in these scows with rock along this half moon line H, he is mistaken, do you?* A. *Yes, sir.*" (See p. 953).

It is hardly necessary for us to add that after the State of Minnesota called Martin Wheeler and showed the absolute failure of the testimony of John Chippeway, he was not re-called for the purpose of contradicting Captain Wheeler, Captain Jeffry, and Captain Alfred Merritt. We think nothing further need be said concerning the testimony of John Chippeway or Ojibway. The zeal of the State of Wisconsin really carried it too far insofar as the testimony of John Chippeway was concerned.

J. A. CURO.

The next witness called by the State of Wisconsin was J. A. Curo, and his testimony is found at page 700 of the Record. This witness lived at Frazee, Minnesota, at one time lived at West Duluth and lived there for thirty-one years. He had been familiar with the waters of the St. Louis Bay for about thirty years (see pp. 700,701), i. e. he became familiar with these waters, according to his testimony, three or four years before the Government improved the channel above Grassy Point in

1893. He had nothing but his memory to go on and no records of any kind. His *shore residency was his chief claim to competency* to furnish testimony as to the channels in these Rivers in the early days.

On his direct examination he was asked:

"Q. Could you see the boats as they went up the river and came down the river? A. Yes, sir, I could.

Q. Could you tell where they were going from your house? A. *I could tell whether they were going up or down, yes.*

Q. Did you observe where the boats navigated in the '80's. A. Yes, sir. They navigated on the west side of the flat and bay up there in the St. Louis River next to the Minnesota shore.

Q. That is, after they turned Grassy Point? A. Yes, sir, after they turned Grassy Point." (See p. 701).

He then testified that in 1893 they dredged the new channel where it now exists, and *that this work was done in 1893.* His counsel knew he was mistaken, but they did not get him to change. He testified:

"Q. *Now are you sure that it was in '93?* A. *I am pretty positive along about that time.*

Q. Do you mean the dredging out the bars or-- A. No, I mean dredging out the new channel, *channel that cut the new channel out and filled the old channel in, and made the new channel."*... (See p. 702).

Of course ,this witness was absolutely mistaken in this because the new channel was not dredged until 1900 and 1902, and if he could make a mistake of nine or ten years on this, it may well be that he made a mistake of two or three years on the question of when he saw boats navigating the Millford channel.

Again, this shore sailor was asked the following question:

"Q. Could you see from your house whether the boats that went up the river there, up and down the river in the '80's, were taking that channel that you speak of that is quite deep, or not? A. Well, if I could see them, if they wasn't I would see them standing on a sand-bar or mud flat. They had to be in that river or they couldn't go. That is, any boat had any draft to it, *anything over five or six or seven feet*, they had to go in that river, St. Louis River. Grassy Point, they went right in where the Carnegie Coal Dock is now. Carnegie Coal Dock is about two-thirds across the river. The Zenith Furnace was going to build right out, and I believe when I was working for them there was a protest put in not to close that river because they had no way of getting up above there." (See p. 702).

This "navigator's" observation were all taken from the shore. On cross-examination, it was developed really what his business was. He testified:

"A. My folks are living on a farm. I am working in Duulth. I make my headquarters in Duluth. I only go up there once in a great while, once every thirty days or such a matter.

Q. What are you doing in Duluth? A. Working for the N. P. Railroad Company, bridges and building department.

Q. Are you doing work with your hands, carpenter? A. Yes, I have to work with my hands if I work.

Q. Well, I don't know; some fellows don't. You work as a carpenter—carpenter trade? A. Yes, sir.

Q. How long have you been working for the N. P.? A. About a year this last time.

Q. Are you a carpenter by trade? A. Well, ship carpenter." (See p. 704).

He then testified about his running a boat livery, i. e. row boats, gasoline launches, and canoes. He had been doing that for about seventeen years. Of course these could run anywhere on the Bay (see p. 704). We think it hardly worth our while to take the time of the Court in discussing the testimony of this "shore sailor" on channels that he knew nothing of and had no experience in navigating, except as he ran his canoes and row boats "in livery" as he testified.

VICTOR DESIMVAL.

The next witness called by the State of Wisconsin was Victor Desimval ,and his testimony is found at page 707. The testimony of this witness was of little importance. Perhaps the most important thing he testified to was his great age. He said he was 85 years of age. He came to the head of the Lakes in 1855 and went over and took a pre-emption claim near Millford, he says, *after the Civil War*, but locates the time as from '62 on. He says:

"A. I lived there right after the Civil War from '62 on.

Q. From '62 on?

A. Yes." (see p. 707)

He says he started to run a saw mill at that point and shipped lumber down to Ontonagon:

"A. That is in '62, '63, '64 and '5.

Q. Were you on the water of the St. Louis River in the '50's any? A. In the '60's.

Q. Were you on it in the '50s's any? A. Yes, sir.

Q. What did you do in the '50's? A. The first thing I done I worked in Oneota mill one winter and then the panic came on, I think it is the winter of '56 and '57, panic came on, couldn't get our pay, and we scattered. That is the winter, I guess, we quit.

Q. Did you have a boat on the water of the river above Grassy Point any in the '50's? A. Yes, sir." (See p. 708).

He testified to a good deal of immaterial stuff as to the early days around the head of the lake and finally got down to stating that he was engineer on a boat for a short time (see p. 709). He corroborated Minnesota's witnesses, however, as to running the saw mill at Millford and shipping the lumber out on the boats that went up the "Millford" channel as far as Millford (p. 710).

This man testified concerning the route he took from his saw mill at Millford:

"Q. Is this the course that you have indicated there as channel, is that the course that you took going up the river when you were running the Witt? A. The Witt, yes, sir.

Q. And is that the course that boats generally took then? A. *That is the only course for boats to take. The other one is nothing, what they call the cut-off is nothing only for row boats and canoes.*" (See p. 711.)

Of course, this testimony cannot be true, as probably more than two dozen witnesses testified that all the traffic in the early days was over the channel marked A-G-B-C on defendant's Exhibit 1, and furthermore his testimony shows that outside of

the Manhattan which went up the Bay at one time, (he says just one trip) (see p. 709), the boats that he was familiar with did not draw more than three or four feet of water, and there was no necessity of their taking any channel at any place. He testified as to his own experience as an engineer on this little flat bottom boat:

"A. I was engineer on a boat.

Q. What boat? A. In that Stillman-Witt.

Q. Did you go up the river on any other boat? A. I rode up.

Q. On what boats did you ride up? A. That is the one I tried to get the name of.

Q. You can't remember the name of it? A. No, sir.

Q. Did you go up frequently? A. On the other one?

Q. Yes. A. No.

Q. How often did you go up? A. *Two or three times.*

Q. When was that, in the '60's? A. Yes.

Q. Which channel did it go? A. Went the same you got there.

Q. The same as you showed me on the picture? A. Yes, sir.

Q. What was that called? A. Called the St. Louis River channel." (See p. 712).

As said before, this little flat bottom boat, Stillman-Witt, drawing less than four feet of water, could go anywhere, and there is no necessity for taking any particular channel.

This old man testified that he had not been up the River above Grassy Point for forty years:

"Q. How long since you have been up there? A. Forty years." (See p. 710).

Then he returns to his experience as engineer on the Stillman-Witt:

"Q. Did you go up the river very many times in the '70's? A. We used to go up twice and sometimes three times a week with the Stillman-Witt; we passed through.

Q. Sometimes three times a week with the Stillman-Witt? A. Yes.

Q. What were you doing with the Stillman-Witt? A. Carrying excursions.

Q. You went up— A. Used to go up there one day and out on Lake Superior the next day, excursions.

Q. But you ran it up there one whole season, did you? A. One summer, yes.

Q. And would go up there two or three times a week? A. Yes.

Q. *Have you gone up the river on excursion boats, on other excursion boats?* A. *No.*

Q. Have you gone up on any other boats? A. *I went up once or twice on some of the other boats on the excursion.*" (See p. 713).

He was then asked how long he had lived up at Millford. His answer was:

"A. Eight or nine years. *These dates taxes a man's memory too strong; can't hardly tell.*

Q. What is that? A. Them dates taxes a man's memory too strong.

Q. You just came to Superior this morning, did you, or last night? A. Last night." (See p. 713).

On his cross-examination he testified that he lived at Menominee and had lived there forty years; after living at Millford he ran a brewery for a little while in Superior until his money played out (p. 714). He testified that he left Millford in 1868 or '69.

With reference to his relation with the Stillman-Witt he testified:

"Q. *You weren't a pilot yourself?* A. *I wasn't a pilot; I was the engineer.*

Q. You never had any papers to run a boat, did you? A. I had a Government license.

Q. For an engineer? A. For an engineer.

Q. But not for a pilot? A. I didn't say I ran for a pilot." (See p. 715).

Again, he testified:

"Q. Now there weren't very many boats that ran up beyond Grassy Point prior to the time you went to Millford, was there? A. *No; there wasn't many before them two ferry boats came up from down below.*

Q. One of them you called the Stillman-Witt? A. That is the first one that came up.

Q. And the other you can't remember the name? A. *I can't remember the name; that is the only two ferry boats that was there, of any size.*

Q. While you were in Millford? A. Yes.

Q. Now as I understand it, this ferry boat that ran up the St. Louis Bay or river beyond Grassy Point prior to 1869 used to stop at Millford at your mill and get slabs for fuel? A. *Yes, sir, one of them.*

Q. Both of them did? A. No, I didn't say both of them. I say one of them. The one that I don't remember the name.

Q. That stopped as it went up? A. *Sometimes as it went up; sometimes as it came down.*

Q. *To get slabs there for fuel?* A. *Yes, sir.*

Q. Then the boats that came up to get lumber from your mill never went any further than your dock? A. *No. They came up to the mill.*

Q. *Came up to the mill and got a part of a load of lumber and then they would go out to the dock?* A. *And finish the load."* (See p. 716).

So it will be seen that this little boat, other than the Stillman-Witt, that went up the River simply went into Millford to get its fuel, and it was one of these little boats like the Stillman-Witt that could run anywhere and did not need a channel. Concerning the draught of these little boats, he testified:

"Q. The Stillman-Witt didn't draw over four feet of water, did it? A. *No, she didn't draw that.*

Q. *Didn't draw four feet?* A. Not unless she was loaded to capacity.

Q. Then she wouldn't draw over four feet, would she? A. *Not much. She was a flat bottom.*

Q. *Flat bottom?* A. *Yes."* (p. 716).

The old gentleman was absolutely wrong in his testimony concerning the "Cut-off" channel because he says it was so shallaw that *nothing but row boats could use it.*

"Q. *Now, in the cut-off, what is known as the cut-off, that water was only deep enough, as I understand it, for row boats and canoes?* A. *That is all.*" (See p. 716).

Compare that testimony with the testimony of at least two dozen other witnesses testifying in the case, claiming that boats drawing six, seven or even eight feet could and did take this channel and the soundings show this to be the fact, and that the water was deep enough for these boats is demonstrated by the Record.

He then testified concerning the shallowness of the draught of these two little boats that he knew about, stating that the Stillman-Witt didn't draw over four feet of water, since she was a flat bottom boat. (See p. 716).

The testimony of this old man needs no further consideration, in our opinion. It is practically worthless insofar as even hinting at where the "main, navigated and navigable channel" of commerce was prior to government dredging in 1893.

H. V. DESIMVAL.

The next witness called by the State of Wisconsin on this point was H. V. Desimval, a son of the old gentleman whose testimony is referred to last hereinabove, and H. V. Desimval's testimony is found at page 717.

He testified that he was born in Superior, and outside of living with his father on the pre-emption at Millford for about eight years he had lived all his life in Superior. He was not a

sailor, and the only experience he had around these waters was as a boy and in 1888, 1889, 1890 and 1891. He testified that he got out some logs up above Millford and had them towed down to Peyton, Kimball & Barber's saw mill in Superior (p. 717). His experience, according to his testimony, on these bay waters was as follows:

"Q. Did you go up and down the St. Louis River any other times than when you went up with the rafts, up and down with the rafts? A. Outside of the rafts?

Q. Yes, outside of the rafts. A. *Nothing any more than small boats or riding with the pleasure boat.*" (See p. 718).

Here it will be seen that this witness was nothing of a navigator and had very little experience on these waters, but we wish especially to call attention to this witness as he came in direct conflict with Captain Jeffry in a very material way, who he thought was dead at the time he testified:

"Q. Do you know who was running the Nellie Cotton at that time? A. Yes, sir.

Q. Who? A. *Jack Jeffry was captain.*

Q. What course did he come down the St. Louis between Grassy Point and Big Island? A. Well, he always took the channel, the St. Louis River.

Q. By the 'channel', what do you mean? A. The St. Louis River.

Q. After you round Grassy Point going up which way does it run? A. After you passed Grassy Point a little ways it runs to the west, makes a sort of circle there. I couldn't tell it by words; I could mark it out.

Q. Does it run close to Minnesota or the Wisconsin shore? A. I would say the Minnesota shore. You mean the main line, the main shores?

Q. The main channel. A. You mean the main shores, the Wisconsin main shore or the Minnesota main shore?

Q. I mean the Minnesota main shore. A. It runs close to it.

Q. It runs close to the Minnesota main shore? A. Yes.

Q. What did he do in bringing the rafts down? A. When I sold the logs I was always under contract to raft them logs and follow them down with one or two men with me so we would have no trouble on the way down.

Q. Then did you ride on the Nellie Cotton or on the logs? A. On the logs.

Q. And what did you do, what was your purpose in riding on the logs? A. Watching them logs; watching them rafts from getting mixed up out of the channel and getting into obstructions that is along the channel.

Q. Was there a channel there that was called the main channel between Grassy Point and the Big Island? A. We always called it the main channel." (See pp. 718, 719).

He was then shown by his counsel Exhibit 1 and was asked to indicate the course that these logs took coming down from Grassy Point. It was evident from the start that the witness did not know what he was talking about, and he became greatly confused in trying to indicate the channel on the map that was used in towing the logs (pp. 719, 720).

The counsel and Commissioner got into a wrangle over the confusion and nonsense of the witness, but his testimony is not of sufficient importance to take the time here to discuss it. It is found on page 720 of the Record.

We will admit, for the purpose of argument, that the counsel tried to get him to state that the logs came down the "Millford" channel. It might not be out of place, however, to add at this point brief comment on what took place insofar as the Commissioner was concerned:

"The Commissioner: The exhibit will be received for what it is worth, but it is plain that the witness is in confusion in examining the map.

Mr. Bailey: Plain what?

The Commissioner: That the witness didn't understand that map.

Mr. Bailey: I don't think that is a fair statement. The witness drew a map substantially where the line on Exhibit 1 is shown. I don't think it is a proper statement to say that the witness did not understand the map.

Mr. Gard: It isn't true to say that the witness indicated the line indicated on Minnesota's exhibit there as the red line. *I saw him, and he went between the lines. He didn't indicate either line.* He didn't indicate the line that indicated the main channel nor he didn't indicate that line.

The Commissioner: *I am unable to decide upon the dispute between counsel. I am only able to ascertain that the witness was in confusion in examining the map.*

Mr. Fryberger: I wish to enter an objection on the record to this Commissioner making any comment of any nature upon this testimony as to whether the witness is confused or not, and I think that the *duties of the Commissioner are confined, not to trying the Wisconsin side of the case, but merely to taking the evidence.*

The Commissioner: The Commissioner is not trying either side of the case but desires to have the evidence come as intelligibly—

Mr. Bailey: The evidence is all in and Your Honor was making some remark about it after it was in." (p. 723).

On cross-examination, the testimony of this witness was disposed of in very short order, when he conceded that Captain Jeffry was the captain that towed his logs down. He testified:

"Q. *Now, Captain Jeffry would know how he brought down those logs, wouldn't he?* A. *I think you will never find out from him.*

Q. *Will you answer the question?* A. *I think he is in his grave.*

Q. That Jeffry is in his grave? A. Yes, sir. It's Captain Jeffry.

Q. It isn't the one that is alive now? A. I don't know any Captain Jeffrey now.

Q. What was his name? A. Jack Jeffry.

Q. He isn't dead, is he? A. I supposed he is; I heard he was.

Q. When did you hear that? A. A year ago.

Q. How many logs did you bring down from your claim? A. Do you want to know in all, or each season?

Q. Well, we will take it in all now? A. Ten million.

Q. From your claim? A. I have no claim.

Q. You had no claim; you got these up there? A. Yes, sir.

Q. *And Jack Jeffry towed them all down?* A. *Yes, sir.*" (p. 724).

It becomes necessary now to call attention to Captain Jeffry's testimony. It turned out much to the chagrin of the counsel for Wisconsin that Captain Jeffry was not dead, but was

very much alive, although he was in the hospital recovering from an operation. His deposition was taken, and he testified on this point in direct contradiction to Desimval, if it be contended that Desimval testified to using Millford channel. It is doubtful if he testified to the use of any channel. Captain Jeffry testified:

"Q. From '70 to '90 did you go up the river a great deal? A. *All hours of the day and all hours of the night.*

Q. *Are you familiar with all those channels up there?* A. *Yes, sir. I could use to go up any hour of the night. Didn't care how dark it was.*

Q. *Are you familiar with the Millford channel too, been in there to get logs and so forth?* A. *Yes, sir, slabs, wheel slabs, and tow down scow for fuel; took it down to Superior on an old dock we had down there.*

Q. From Desimval's little mill? A. Yes, Desimval's mill, we called it.

Q. I am going to ask you to look at Minnesota's Exhibit 1. Here is Grassy Point? A. Yes, sir.

Q. Here is the Millford channel. Take this line from A to G and G toB, and B to C, and then from B to D, and here is Big Island? A. Yes.

Q. Now what channel did your boat take? A. I generally ran after I rounded the end of Grassy Point, we called that the Devil's Elbow, that's really the name of it.

Q. Did they ever move it further up the stream later? A. Some does. Some call it the Devil's Elbow.

Q. After you got around Grassy Point— A. We turned that and I would go right across— Where is that little island, part of it dredged away now?

Q. Between B and C and B and D. It was right in there. A. We used to strike right across. There was a point of rushes circled down there something like that (indicating), and we circled just to clear that point. In the

spring we couldn't see them rushes and then we had to look out for that point.

Q. If you wanted to go the cut-off you would go which side of the little island? A. I would go on the south side. If I wanted to go up river I would go on the north side.

Q. About how many feet from the island? A. Pretty close to it either way.

Q. *Is that the route that all of the boats took in the early days?* A. *Yes.*

Q. Before the deep channel was dredged so that they could get down there with the scows of lumber? A. *Yes, we took that way unless something called us—I have taken logs out from what we called Keene's Creek, and that's straight in at the base of Grassy Point in on the land. You might say come out in that point, the creek does.*

Q. *There was a witness testified, young Desimval, that from '88 on down that he logged there for several winters and towed out rafts, about 10 million feet, and that you did all the towing, and he said that you always brought his rafts and all his logs in around by Millford instead of going around this channel you speak of?* A. *Not unless he had them into Millford and wanted them pulled out of there.*

Q. *He is mistaken about that?* A. *He is mistaken about that unless he had some logs down off the hilltop, which the old man Desimval did drop some down where the Duluth Heights used to come out,* just west of that he let them down with a line for his own little mill. Whether the young fellow ever logged down there I don't know. Did he say what mill I delivered them at?

Q. Yes, I think he said Peyton, Kimball & Barber? A. I don't know where young Desimval is now. He used to live upper town in Superior, down near where the old brewery used to be." (See pp. 994, 995).

On cross-examination at pages 996, 997, 998 and 999 he testified to his familiarity with all these waters during all this time and to the fact that he practically always used prior to the

dredging in 1893 the "'Minnesota" channel marked on Minnesota's Exhibit 1 as A-G-B-C. On redirect examination he testified with reference to traversing this Minnesota channel A-G-B-C:

> "Q. As I understand it, you went up the channel that you described, the one that you said you always took up around this little grassy island—you had been up there hundreds of times, haven't you, north of that island? A. Yes. I would be safe enough to say that.
>
> Q. And you had no trouble in getting over there with the Nellie Cotton drawing six and a half feet? A. No.
>
> Q. Or the Amethyst drawing 6 feet 2? A. No." (See p. 1001).

It really is remarkable that Wisconsin should be so unfortunate in calling these shore witnesses who tried so hard to help out the State of Wisconsin and yet showed that they knew practically nothing about the matter concerning which they tried to testify.

JOSEPH JACOBS.

The next witness called by the State of Wisconsin was Joseph Jacobs, whose testimony is found at page 728. He said he had been a tug captain since 1893, the date when the dredging was done by the Government. Prior to that time he had been a linesman, a deck-hand and firing on tugs (p. 729). So this witness was not a navigator, except as a roustabout prior to the time that the Government dredging was done in the disputed waters in 1893. He testified on direct examination that he was towing sandstone to the dock at Minnesota Point from Fond du Lac part of the season from 1887 to 1888, simply during school vacations:

"A. No, sir, just during the period of vacation at school.

Q. *You were going to school at that time?* A. *Yes, sir.*

Q. *How old were you?* A. 16 *years of age.*

Q. And you spent your vacations on this tug? A. Yes, sir.

Q. As deckhand? A. Yes, sir. (See p. 729).

So it will be seen on his own testimony, he was a very young boy when he was acting as deck hand on these waters. He had no other experience on these waters other than working in school vacation as a deck hand in 1887 and 1888 until 1900, when he commenced to tow logs (see p. 730). Of course, his experience after the dredging was done by the Government in 1893 is of no importance here, and we will devote no particular time to it. He also testified that in 1891 he fired on the tug James Bardon, towing rock from Fond du Lac to Tower Slip. Then he testifies:

"Q. And what other experience have you had on the St. Louis? A. Why, I didn't have any experience up the St. Louis River until 1897. I towed those rafts down from up river with the tug Douglas." (See p. 731).

He testified on pages 732 and 733, or attempted to testify as nearly as we can get to it, although it was very difficult to ascertain just what he did mean, that they always went up the "short cut" channel and came back north of Big Island down through "Millford" channel. This he thinks was in 1891. He had no records of any kind to locate the time, and there is no doubt in the world that he came down the "Millford" channel after the improvement was made in 1893.

He testified on his cross-examination that the boats that he sailed on drew from six to six and a half feet or seven feet (pp. 736, 737). The scows did not draw as much water (pp. 736, 737). If this was true, there was absolutely no reason why he should not take the channel A-G-B-C and either go the "short cut" or north of Big Island. And yet he says as near as we can make out that he came down the "Millford" channel (see p. 737). As to why he should do this, he gives no reason, except that he never knew that there was a channel as shown by defendant's Exhibit 1 known as A-G-B-C. He also testified that he was working during all this time for Jeffry Brothers, Captain Jack Jeffry being one of the owners and being the captain. The latter testified that he always came down the channel A-G-B-C on defendant's Exhibit 1. This witness Jacobs testified concerning this last named channel:

> "A. No, I never did. *I never see any one go through there, not unless—no, not unless it was gasoline boats since then, in the last five or six years I have seen gasoline boats go across from the end of this island across in there into the new channel.* The new channel comes along there and cuts a big chunk of that off." (p. 737).

On page 738 he testifies to a lot of twaddle about the bullrushes interfering with the Minnesota channel marked on defendant's Exhibit 1, and his testimony became so contradictory that it was impossible to get head or tail of what he really intended to say (see pp. 738, 739 and 740). On page 740 he testified:

> "Q. Now if the water was not less than seven feet deep that entire channel from the point opposite Grassy Point up northerly of this little island to the point marked C on Exhibit 1, do you know any reason why you couldn't

go through there with your boats? A. *Not at all, simply didn't know there was a hole there, that is all.*

Q. *You simply didn't know it?* A. *No.*

Q. *And woudn't it be the best channel to take, the shorter channel to take with boats drawing six feet or less and with scows drawing six feet?* A. *Yes, if we knew it was there, yes, sir.*

Q. *Well, now, as a matter of fact all you are giving us is the channel you and Osborne took at that time?* A. *Yes, that is what I am giving you. That is what I learned.*

Q. *That is all you knew?* A. *Yes, sir.*" (See p. 740).

There are just two things to be said of the testimony of this witness: Either he was knowingly not telling the truth, or he did not know what he was talking about. He says *he never heard of that channel being used; and if that is true, he never navigated the waters above Grassy Point prior to the year* 1893. Further comment on the testimony of this witness is unnecessary.

A. E. BISHOFF.

A. E. Bishoff was the next witness called by the State of Wisconsin on this point, and his testimony is found at page 742 of the Record. His testimony is so contradictory, incoherent and positively foolish in so many respects that it is hardly worth our while to call attention to it, but we will do so very briefly. He testified that he started out as a cook on the Lottie Bernard (p. 742). Later on he ran the engine on two or three of these little boats. He testified that in '82 he went up above the Big Island *only twice during the entire season* (p. 745). Then he testified that in '83 he went up with a small tug once and came

down the "Cut-off", and the reason he came down the "Cut-off" was because there was a tug with a dredge ahead of him, in the channel north of Big Island. He testified:

> "A. Well, I went up there in '83 with a small tug, I took up a couple of empty scows and brought down a scow loaded with rock from Fond du Lac but they were small scows and I come through the short cut and *the reason I come through the short cut there was a dredge and tug ahead of me* that had come ahead through the upper end into Spirit Lake and a man by the name of Walter Burns sailed the tug," etc. (See p. 745).

He never explained to us what a dredge was doing up there in '83, when there was no improvement of any kind done by dredge until 1893. He then tells what a time he had in coming down the "Cut-off" channel. His specific testimony is as follows on this point:

> "I took the short cut and come down and I missed it on the inside and I swung on the bank and run the scow on the bottom and I had to wait until the dredge come around Big Island in the main channel and they come over to me and towed me off. That was the only experiences that I had up the river. Of course I went up with excursion boats of late years." (See p. 746).

We think it is probably true that the above details about all the experience he had up this River from the way he talked. On his cross-examination, and especially on page 749, he was asked concerning the channels, but he seemed to know practically nothing about them. He finally ended up by testifying:

> "A. Yes, sir, that is with boats of any size.
> Q. The others were with row boats? A. Row boats or small little boats." (p. 749).

This witness rambled along and told how he got stuck on the only trip he made through the "Cut-off" in 1883. He testified:

"Q. You only made one trip in 1883? A. That was all.

Q. That was the trip you used the cut-off? A. Yes, sir.

Q. Going up and coming down? A. Yes, sir.

Q. You got stuck coming down? A. Yes, I got stuck.

Q. *How much water did that boat draw?* A. *About three and a half feet.*

Q. How much did the scow draw? A. Well, the scow probably drew four feet." (See p. 747).

If this fellow who ran marine engines knew anything about navigating, why did he get stuck in the "Cut-off" channel with a *boat drawing three and a half feet of water, when it was used by navigators all the time drawing six, seven or eight feet?*

We say here and now as to this witness, that we cannot understand why a man possessing no more information than he had, was called as a witness for any purpose.

DAVID N. MORRISON.

The next witness called by the State of Wisconsin on this point was David N. Morrison. His testimony is found at page 750. Apparently his chief qualification to testify as to these early channels was the fact that he was *"born in a lighthouse"*, was a barber by trade, and had been a crier for an excursion boat, and

had managed a fourth class hotel called the "Sweitzer Hotel" and ran little row boats. We will spend little time with his testimony and we would not spend any, were it not for the fact that the witness E. B. Banks, the engineer who was called by the State of Wisconsin, testified that this man was the *"Captain"* with whom he rode in going up the bays in question. It turned out by the so-called "Captain's" own testimony that he never was a captain or pilot and never had a license and never ran a boat as either captain or pilot, but did sell tickets and collected fares and thus "operated" a little ferry boat known as the "Bloomer Girl", the name of which he says he changed because he did not like such a name, and he called his boat after that the "Silver Spray". He did not claim to have gone up on boats other than row boats earlier than 1900, 1901 and 1902 (see p. 750).

He testified on direct:

"Q. When did you first go up the St. Louis River? A. Oh, 1885, '86, or '7 along in there.

Q. What took you up the St. Louis River at that time? A. *Hunting, fishing, camping, and carousing around. Every summer I would be up there.*

Q. Have you been up the river on a boat or boats? A. Well, after I got acquainted up there and got older I managed a boat, an excursion. When I got her she was known as the Bloomer Girl—

Q. What boat? A. She was known as the Bloomer Girl but I changed her name to Silver Spray. I didn't like the other name.

Q. And when was that? A. 1900 and '01 and '02. I forget just what date we started." (See p. 750).

Of course, what channels were used after 1893, the date of the Government dredging, is not material in this case. He did, in

his boastful manner, testify how he taught an old gentleman to run a sail boat, "taught him everything there was to learn inside the bay." His exact testimony is as follows:

"A. The old gentleman that owned the boat was sailing her, he was an old man about seventy-three, seventy-four or seventy-five years old, and he was what we call an outside man, lake captain, *and me knowing the harbor here as well as I did I taught him all there was to be taught inside of Minnesota Point.*

Q. Did you teach him the channel up the river? A. *Everything there was, yes, sir.*

Q. And that was in the summer of 1890? A. *No, sir, that was the spring of* 1900." (See p. 751).

Of course, the counsel expected him to say that this was in 1890, but they were just ten years out of the way. He did not claim to have any experience of any consequence until after 1893 with reference to these waters.

He testified on his cross-examination in the same blustering fashion with reference to the short cut channel:

"Q. And you say they wanted you to go up there? A. They wanted to favor me by showing the cut-off.

Q. Showing you a shorter cut than you used? A. Yes, sir.

Q. And you didn't take much stock in that channel, did you? A. No, no, sir.

Q. And when you started up there you got stuck? A. I didn't take the boat. These men had her.

Q. And how much water did the boat draw? A. She drawed less than seven feet.

Q. *What did they give as their excuse for getting stuck in a channel that they as well as other boats all used?* A. *I don't remember now.*

Q. What did you say about their taking you up a channel claiming that was the best route and getting stuck? A. I don't remember just what was said but I know they were very disappointed they couldn't get the big boat up there.

Q. *They said that was the channel they used?* A. *Yes, sir.*

Q. And the one that was commonly used? A. I don't know that they said that.

Q. Why did they want you to use it? A. Because they was friends of mine and they thought they thought they would save me fuel and mileage.

Q. Well, they got out of the channel, that was all? A. Well, I don't know.

Q. How long were you a barber? A. I started in 1885.

Q. What are you doing now? A. Manager of the Sweitzer Hotel.

Q. Where is that? A. Corner of Fourth and Banks.

Q. What kind of a hotel is that, laboring man's hotel? A. Yes, sir." (p. 762).

We will spend no more time with the witness Dave Morrison.

JAMES BARDON.

The next witness called by the State of Wisconsin was James Bardon, and his testimony is found at page 763 of the Record. Mr. Bardon is an estimable gentleman and of good standing, who has lived at the head of the lakes since the '50's. He was a shore man only, in fact purely a business man, and while intensely interested in this case and exceedingly prejudiced and biased, we do not question his integrity in the least. He was very frank in admitting that he knew practically nothing about these channels. He affirmatively stated that his knowledge did not compare with the knowledge of the captains who testified for the State of Minnesota. On page 769 he tells about the different little saw mills he owned and how he taught school in the early days, published a little newspaper, and made a living by his wits in any way he could. He testified that he went up to Fond du Lac once in 1861 when the Government paid the Indians off. This boat drew about seven feet of water, he thought. He did not know. Of course, that boat could have gone either the short cut or any other channel in these bays that her master desired her to take. The counsel for Wisconsin was very anxious to make it appear that Mr. Bardon had some knowledge of the channels above Grassy Point, but he did not assume the honor of possessing such knowledge. He testified:

"Q. Did the people living in this vicinity at that time understand where the main channel of the St. Louis River was? A. Oh, I think they did. They knew where the deepest water was.

Q. Above Grassy Point? A. Of course, they did going and coming in boats; *they found out some way and used it.*

Q. And there was a deep water course above Grassy Point that was actually referred to as the main channel? A. Yes; yes. *I guess it was the main channel* if it was the deepest water.

Q. That is where the deepest water was? A. Where the deepest water was.

Q. *From your familiarity with those waters prior to the time you went up there with the Seneca did you know where that deep water course was?* A. *No, I did not.*" (See p. 771).

Again, he was asked:

"Q. Can you state now whether the Seneca followed that deep water course? A. *Oh, she must have followed it on account of her draught and her familiarity with the route.* She was a boat that was running here regularly up and down. She was owned at Superior and made regular trips," etc. (p. 771).

He had already testified that she was a boat that drew six or seven feet of water, to be exact:

"A. *Six or seevn feet of water, as near as I can recollect.*" (p. 770).

The only reason he says that he thinks she took the "Millford" channel *was because she was a deep draft boat.* The Meade map, as well as the testimony of all the Minnesota captains who testified, show conclusively that a boat drawing six or seven feet could just as well or better go up the channel marked on Minnesota's Exhibit 1 as A-G-B-C as to go up any other channel, so there really is nothing in Mr. Bardon's testimony backing up his "thinking" she took the "Milford" chanel. In fact, he affirmatively stated that he could not describe or tell the course she took:

"Q. *You couldn't describe the course that you took, particularly as she went around Grassy Point?* A. *Oh, I couldn't, no, sir.*

Q. But you do know that it went north? A. I know she went up there anyway and I know she went around as all boats nearly, went around north of the Big Island." (See p. 771).

On page 772 on his direct examination, counsel for Wisconsin attempted to get a direct answer from him that the boats used the "Millford" channel, but they did not get it.

"Q. That is the channel that boats usually and customarily took? A. *So far as I know, yes.* They would go around over that way and around the island was the way they found." (p. 772).

He had to admit, however, on page 781 that he knew that all the navigators and mariners in the early days used the Bayfield chart as their guide (see p. 781).

On his cross-examination, he was asked with reference to some of these tugs that navigated these bays in the early days, but he disclaimed any sufficient knowledge concerning their draught, etc., to testify at all. He said:

"Q. How far up would they go? A. They would go up to Fond du Lac some times.

Q. How much water would they draw? A. Six or eight feet, perhaps.

Q. Six or eight feet? A. *I would think so. I am not the best authority on that. Tugmen and boatmen would be the men.*

Q. *Would be the better men on that?* A. *Better men on that.*

Q. And your judgment would be they didn't exceed eight feet? A. Yes.

Q. *You never owned any of those tugs, did you?* A. *No, sir.*

Q. *Or interested in any of them?* A. *No.*" (See p. 781).

On page 785 in further admitting that he knew practically nothing about the channels above Grassy Point, he testified:

"Mr. Fryberger: It leaves that very confusing. Now I want to ask you this: Of your own knowledge, Mr. Bardon, whether or not in the '60's or '70's, you knew whether or not the navigators who went up the St. Louis Bay beyond Grassy Point traveled as a customary route the line marked on Minnesota's Exhibit 1, running from A to G and G to B and B to C, of your own knowledge I am asking you?

The Witness: *I do not.*" (p. 785).

Again, he testified:

"Q. Do you know what depth of water was in the channel running from A to G and G to B and B to C? A. *No; only as I see it on the map.*

Q. *You never knew anything about the actual soundings through there?* A. *No.*

Q. *Do you know of any reason, if the soundings showed not less than seven feet at any point here, a boat drawing six or seven feet couldn't go through there?* A. *I should think they might if there was water enough.*

Q. Did you know of your own knowledge of the bar in what we call channel H, just exactly north of C, not talking about what you heard, Mr. Bardon? A. *No, I didn't; never knew a thing about it one way or the other.*

Q. Did you ever know that there was a shoal place there, not over seven feet and nine-tenths? A. Don't remember definitely." (See p. 785).

Again, he testified concerning his lack of information on these channels:

"Q. *It wasn't your business to seek out the channels up above Grassy Point?* A. *No, sir.* L

Q. *Never has been?* A. *No, sir.*

Q. *And you wouldn't be as competent to testify to those channels as the Merritts and the Howards who ran boats up there?* A. *Not as competent as men who had run boats up there.*

Q. *Do you know of those men running boats up there?* A. *I do, yes.*

Q. *The Merritts were competent men?* A. *Yes, sir.*

Q. *In the nautical business?* A. *Yes, sir.*" (p. 784).

We think it hardly worth while spending any more time on the testimony of James Bardon insofar as it applied to his knowledge of channels in the bay waters above Grassy Point.

WILLIAM F. THOMPSON.

The next witness called by the State of Wisconsin on this point was William F. Thompson, and his testimony is found at page 809 of the Record. He had held a pilot's license and a master's license, either one or the other, since the year '86 (p. 809). He started out as a cook on the Nellie Cotton, started in 1881, and ran on the Nellie Cotton with Captain Jeffry, the man who testified that he never used the "Millford" channel unless towing out of Millford or that Bay (p. 809). He is one of the witnesses who testified to coming down one channel on the same boat with the captain who testified that they came down another channel. On page 810 he says:

"Q. Can you give us some idea of the extent that you towed logs from up the St. Louis River in the '80's? A. Well, it's a long while ago. I can't say just how many, but we used to go up there quite often, you know, and get a raft.

Q. What course did you take above Grassy Point? A. *Well, it would depend upon what way the captain figured when we come down. If it was night we would come down the old main channel. If it was daylight we would come down through the cut-off if we didn't have a big raft.*

Q. If you didn't have a big raft you would come through the cut-off? A. Yes, sir.

Q. And in the day-time? A. Yes, sir.

Q. Otherwise you say you would take the main channel? A. Yes, sir." (p 810).

He testified further concerning going the "Millford" channel:

"Q. Is that the channel that boats usually took in going north of Big Island? A. Well, that is the only channel we could take if you drew over eight feet of water.

Q. Is that the channel that boats usually took when you went north of Big Island? A. The old original channel?

Q. Yes. A. Yes, sir." (p. 812).

Of course, it is a matter of demonstration by the charts in evidence here that prior to the time of the dredging in 1893 no boat could go either channel or any other channel drawing over eight feet of water; so the witness is evidently talking about the time after the dredging was done, when he was talking about a time of going up with boats drawing more than eight feet of water.

On his re-direct examination he contradicts the testimony of Captain Jeffry, although, of course, at the time he testified he did not know that Captain Jeffry was to be called:

"Q. You remember that channel well. Now, as a matter of fact, when you sailed with Captain Jeffry isn't it a fact that you went up the channel innumerable times from

G to B and B to C and then on up north of Big Island? A. *We never went this channel at all.*

Q. *From B to C?* A. *No, sir.*

Q. *Don't you think that Captain Jeffry would know where he went when he was captain of the boat?* A. *He ought to.*

Q. *Quite an active man, wasn't he?* A. *He was, at that time.*

Q. How long since you have seen Captain Jeffry? A. I should judge it was two months.

Q. He is now sick in the hospital? A. That's what I heard.

Q. *Do you mean to say that you never went on the line, the channel marked B to C?* A. *Well, I wouldn't say positive that we never went. He might have gone over that route when I was down in the cabin or some place else in the boat or down in the firehold; I wouldn't say we never went there."* (p. 817).

Compare this testimony with the testimony of Captain Jeffry, whose duty it was to keep the channels and sail the boat. He testified that he never came down the "Millford" channel from Big Island and never used the "Millford" channel at all, unless it was to do towing out of Millford Bay. *It is strange how these cooks, firemen and roustabouts would come down one channel and the captains would come down on the same trip, in another channel.* The testimony of the witness under discussion, however, is full of these foolish statements, contradictions of his own evidence, indicating a stubborn determination to stand by the one proposition, that he never used the channel A-G-B-C on defendant's Exhibit 1 *and never heard of its being used.* The Court must be convinced from this evidence long before this that any man that was really familiar with the navigation of the Bay westerly of Grassy Point prior to 1893 would have known of the general use of the channel A-G-B on defendant's Exhibit 1.

GEORGE E. MANN.

The next witness called by the State of Wisconsin on this point was George E. Mann, and his testimony is found at page 827 of the Record. Little attention need be given to the testimony of this witness. He was not a navigator and did not pretend to be. He testified:

"I fired until I got my experience, then I ran the engine later on.

Q. And your father owned the boat? A. Yes, sir." (p. 827).

The name of this boat was the "Merryman".

As we understand his testimony, he did not attempt to locate with any definiteness any channel that was taken (p. 828) On his cross-examination, he admitted that the Merryman only drew four and a half feet of water:

"A. Drawed about 4 and a half, I should judge." (p. 828).

Again, he testified:

"Q. Then you never had much of the running of the boat at all? A. *I didn't run it, no, sir; only ran the engine.*

Q. *It was no part of your business to find the channel or anything of that kind?* A. *Oh, no.*" (See p. 829).

JOHN MORGAN.

The next witness called by the State of Wisconsin on this point was John Morgan, a so-called navigator, and his testimony is found at page 838 of the Record. He was 69 years old and was sick at the time he testified (p. 846). He did not claim to have

sailed but very little on the bays at the head of the lake. He testified:

"Q. Where have you sailed boats? A. Out of Buffalo, of Duluth, and out of Detroit, Michigan.

Q. To what extent have you sailed boats at the head of the lakes here? A. *Oh, I sailed some little boats here.* I sailed the Hammond a couple of years in 1889 and '90, running up the river here, towing stone.

Q. The Hammond? A. Yes, sir, the General Hammond." (See p. 839).

These boats he testified drew about six or seven feet (p. 840). It was very difficult to get from his direct testimony what he claimed was the main channel or when he navigated it. (See pp. 840, 841). He admitted that he frequently used the "Cut-off" with the small boats (p. 842). He testified on his cross-examination that you could not call the channel in the "Cut-off" a channel at all:

"A. Well, no, it wasn't at that time. There wasn't water enough.

Q. I think you said there was 5 feet? A. No, there wasn't.

Q. Was there 4 feet? A. *Well, there was* 4 *feet, but you know the water raises about* 18 *inches.*" (See p. 843).

Of course, this was not true, not only as shown by the evidence of all the competent witnesses in the case on either side but the soundings on the Government map show that there was not a word of truth in the statement. He was simply mistaken.

The map was presented to him on his cross-examination, and he was asked to locate himself a point at the channel that he claimed he took. He stated:

> "A. *I don't understand that map at all. I have got a map of these rivers that's altogether different from that. I can handle the other chart of St. Louis River that I have got, but this here is all new to me. I can't go nothing by that.*" (p. 844).

The man showed that he was very sick and on cross-examination admitted it. To what extent it affected his testimony, we do not know:

> "Q. Have you been sick? A. Yes, been sick.
>
> Q. You are sick now? A. I ain't very well; pretty weak.
>
> Q. And haven't been well? A. I have been ailing for about there or four months.
>
> Q. What is your age? A. About 69." (See p. 846).

He was then asked to do some figuring, but it seemed to be impossible for him to make the simplest computation in addition. (See p. 846).

On pages 848 and 849 is found a record of the most confused and contradictory testimony. It is impossible to ascertain what the witness really did intend to say. See also pages 850 and 851.

G. W. WARD.

The next witness who testified for the State of Wisconsin on this point was G. W. Ward, and his testimony is found at page 851 of the Record. He was running a little boat on the head waters of the Mississippi River at the time of the trial. He ran on the Minnie Lamont in 1881 as a wheelsman and linesman. He

said that counting the time during the whole season he figured that he put in about a month (p. 852). He also ran a little in 1882 and a little in 1883 (see p. 852). He said in '83, '84, '85 and '86 he wheeled, lined and handled the engine sometimes (p. 853). He was employed as an engineer on the Rambler in '95 to '98. The Nellie Cotton he fired in the '90's and stood watch with the engine. He said:

> "A. I fired and stood my watch with the engine; that is, we fired and handled the engine and then if the *captain didn't feel very good, principally on the lake,* why I would take part of his watch and wheel, *as it is only a straight course.* You can't get mixed up any, or no danger." (See p. 855).

He tried then to tell what course the captain took on the boat in which he traveled in coming up St. Louis Bay:

> "That I do remember from the captain's watching the compass, but the others I couldn't tell you. Then we rounded Grassy Point and there's where they taught me to tell Grassy Point from Reed Point, what we used to know as Reed Point in them times. Grassy Point was always represented to me was the point where the little tamaracks, willows, tag alders, and such as that, muskeg, ran clear through to the main shore," etc. (See p. 855).

He then testified that they went over the "Millford" channel (pp. 855, 856). He had to admit, however, that he knew of the "Cut-off" channel and that the boats took that channel.

On his cross-examination, he testified that the Minnie Lamont drew four and a half feet of water, and if loaded with coal would draw five or five and a half; and that the Pridgeon was about the same, possibly drew six feet. (See p. 857).

Pages 858, 859 and 860 contain most incoherent contradictions and statements which cannot be true. This remarkable witness went so far as to contradict all other witnesses in the case and to say that reeds or rushes would grow in twelve feet of water (p. 859). The exact testimony reads as follows:

> "Q. Reeds will grow in 12 feet of water? A. I will bring it to you. I will go right to Pokegama Lake and pull weeds 18 feet long.
>
> Q. I want to know if there are reeds growing in this channel I have called your attention to? A. There is little bunches.
>
> Q. Right in water 12 feet deep? A. Not in water 12 feet deep." (See p. 859).

The only things that he would stick to positively were two facts: One is that he had formerly worked for John Bardon, the Chairman of the Board of Strategy for the State of Wisconsin; and the other was that they always used the "Millford" channel, whether they had a light draught boat or a deep draught boat. Further comment we think is unnecessary.

JOHN BARDON.

The next witness called on this point was John A. Bardon, and his testimony is found at page 863. He was President of the Old Settlers' Association at the Head of the Lakes. He held a pilot's license, but seemed to be no pilot, a title without an office (p. 865). The only boats he ever ran were pleasure boats (p. 865). He had been in the banking business in an early day in a very small way, and always in real estate and insurance business and was never known as a navigator, and so admitted the fact to be. He had to admit that when he had some tugs and scows working for him hauling gravel, that they usually came

through the "short cut" (p. 873). He also admitted that in rounding up these witnesses for the State of Wisconsin he was paid by the State of Wisconsin (p. 875). He commenced to work in the bank in 1887 (p. 875) and stayed with the bank ten years (p. 875); had real estate and insurance business all the time and never drew a salary for any boat work (p. 876).

On page 876 he testified:

"Q. You have never trained with or held yourself out as one of these lake captains or captains that have operated tugs in the harbor? A. *No.*

Q. *You are known as an office and business man, aren't you?* A. *Yes, I hope so.*

Q. And always have been, isn't that true, from the time you went in to that bank, the time you were 24 years old? A. *I aim to have the insurance and real estate as my business.*

Q. And this little fleet of boats that you owned here from time to time *drew less than* 6 *feet of water, the whole bunch?* A. *Yes, they did.*

Q. *You could go most anywhere with those boats?* A. *Most anywhere, but a great many places you couldn't go outside of the channel*" (See p. 876).

His attention was called on cross-examination to Minnesota's Exhibit 54 showing the channel claimed by Minnesota the same as on Minnesota's Exhibit 1; and although he had testified on direct that such channel was not used, he was forced to admit that there was no reason why such channel could not have been used:

"Q. There isn't any reason on earth why every boat that you have mentioned that you had anything to do with

here, and one drawing 6½ feet, couldn't run all the way up through that channel from the main channel off Grassy Point up channel Z and up you might say any part of this channel running from S to R? A. *I presume that is so.*" (See p. 877).

In other words, the shore sailor knew practically nothing about these channels, except what he learned when in these little pleasure boats that he owned from time to time. He had to admit that the captains called by the State of Minnesota were men of standing and knew their business. He testified:

"Q. What about Ben Howard? A. *Ben Howard was a navigator.*

Q. *He would know where the channel was?* A. *He ought to surely.*

Q. *What about Alfred Merritt?* A. *He ought to.*

Q. *What about Martin Wheeler?* A. *Martin Wheeler ought to know. He navigated the St. Louis.*

Q. *He didn't run pleasure boats, the same as you did?* A. *No, he ran everything.*

Q. *Well, he ran boats for business?* A. *Yes, sir.*

Q. *Alf Merritt ran for business?* A. *Yes.*

Q. He wasn't a fellow that ran boats at night and worked in the office in the daytime? A. He ran at night.

Q. I mean, and stayed in the office in the daytime? A. I understand.

Q. *He was a business navigator?* A. *Yes, sir.*

Q. Ben Howard was the same? A. Yes. But I never knew of his navigating the upper bay to any extent. He was vesselman, Ben Howard.

Q. *Ben Howard would know where he went, wouldn't he?* A. *He ought to.*

Q. *Now we will take McManus. Do you know McManus?* A. *Very well.*

Q. *He navigated that upper bay long before you did?* A. *Yes, sir.*

Q. *He navigated for business?* A. *Yes, sir.*

Q. He wasn't a man that stayed in the office in the daytime and ran a boat in the evening? A. No.

Q. *Take Jack Jeffry?* A. *Yes.*

Q. *He was a man that ran boats up there?* A. *Yes.*

Q. *And he didn't stay in the office in the daytime and run in the evening?* A. *No, sir, no.*

Q. All these men drew salaries, didn't they? A. Yes, sir.

Q. Brewer, the lumberman, was a man that was very familiar with that? A. Yes in a way.

Q. What about Captain Stevens? A. Yes.

Q. All these men did, long before you did, and generally after? A. Stevens did not, but a great many of those men did." (See pp. 878, 879).

He then testified to his little boat called Minnie Lamont drawing four feet of water (p. 879).

In short, the cross-examination of Mr. John Bardon demonstrated that he was not a nautical man in any sense of the word and knew little of any value about the channels. He showed intense interest, but could give no information.

E. F. ENGLAND.

The next witness called by the State of Wisconsin was E. F. England, and his testimony is found at page 888 of the Record. He says his first trip up the Bay above Grassy Point was in '85

or '86 (see p. 891). He testified that practically all his experience on the upper waters of the Bay was after 1900, although he said he did a little work in the '90's just prior to 1900 (see pp. 890, 891). As so often said before, any navigation that was done by heavy draft boats after 1893 cuts no figure. The witness seemed to have been utterly confused in his memory as to dates, as well as to channels. He insisted that he brought down barges with a draught of fourteen feet six inches before there was any derdging done of any kind, before 1893 (p. 895). Of course, he was absolutely mistaken in this. He also testified that in 1890 he used to work with a tug called the Williams, that had a draught of ten feet six in 1890. He testified:

"Q. You didn't go up that channel with a 10 foot boat in 1890, did you, prior to the dredging in the channel in '93; aren't you mistaken in your dates? A. On what channel?

Q. In any channel above Grassy Point? A. *Sure.*

Q. *You think you went up with a 10 foot 6 boat prior to the time the Government dredged the channel?* A. *Yes, sir.*

Q. *Prior to the time there was any dredging done?* A. *Yes, sir.*

Q. *You aren't very certain of your dates?* A. *It is pretty hard to jog my memory back to get my memory right back to the time.*

Q. *You can't tell when the dredging was done?* A. *No, I couldn't tell the date.*" (p. 895).

Can the Court be expected to take the testimony of a witness of this character as against the undisputed testimony that it found in the Record, consisting not only of competent navigators, but of the Government charts showing the soundings during all

these years? He was asked concerning how deep draught boats went through the "Cut-off" in the early days:

"Q. Well, in the early days don't you know, as a matter of fact, that the cut-off was practically the only channel that was used; don't you know that? A. No ,sir.

Q. Didn't you ever hear that? A. No, sir." (See p. 897).

Again, he testified:

"Q. But you only had about half a dozen trips on that bay during the '80's, as you said? A. I had my mind in the Amethyst in '88. I don't remember the time I stated there, but I referred to five or six times before I had my license, and the time I was on the Amethyst.

Q. Then your experience on upper St. Louis Bay was largely after 1890, wasn't it? A. Oh, I don't know. It was from the time I started in there, different kinds of experience; deep draught boats was later on in the '90's.

Q. Deep draught boats was after 1893, wasn't it? A. I just forget just what time Clark Jackson started their mill, and shipped lumber out there. I couldn't give the date. I think I towed the first boat up there and towed her back." (See p. 898).

Again, he testified:

"Q. *When you towed the stone that's when you went up the cut-off, wasn't it?* A. *Yes, sir, we used the cut-off.*

Q. *That was in* 1890? A. *Yes, sir.*" (See p. 900).

WILLIAM L. HUTCHINS.

The next witness called by the State of Wisconsin was William L. Hutchins, and his testimony is found at page 900. He had been a sailor for about fifty years (p. 900), had held a pilot's license ever since 1886. He was then asked on direct examination if he had ever sailed up the St. Louis River. He answered:

"A. *I have been up there a couple of times, yes sir.*

Q. *Any more than a couple of times?* A. Do you mean clean up to Fond du Lac?

Q. Well, up the St. Louis River to the vicinity of Spirit Lake or Big Island? A. Yes.

Q. How often? A. Well, I used to be up there every day.

Q. When? A. *That was in* 1902 *and* '3, *I think, when we was working in that new cut.*" (p. 901).

Of course, his being up there in 1903 and after, is not material in this case, as the conditions entirely changed after 1893, as mentioned so many times before in this brief. Certainly the knowledge that he acquired on his two trips up the river prior to that time is not of sufficient importance to interest us in this case.

JOHN STEVENS.

The next witness called by the State of Wisconsin was a man called John Stevens. He was not the last witness called, but he was next to the last. His testimony is found at page

1001. This witness was so ignorant that his testimony amounted to a mere joke, and we think we are not overstating it in thus chacaterizing the evidence. He testified that he lived at Kenosha, St. Louis County, Minnesota, and that his business was *farming*. He formerly was engineer on tug boats (p. 1001). He then told about his navigating the Bay at very early time. His testimony on direct was frequently incoherent and full of nonsense, mere piffle. On cross-examination he was asked a few questions concerning his farm:

"Q. *Keep one horse?* A. *I haven't got any at all.*

Q. Your farm is rather limited? A. Yes. I have got a piece of land out there. I have got quite a few potatoes.

Q. *You have lived there* 12 *years.* A. I lived there longer.

Q. How long have you lived there? A. About 15 years, I think, on the farm." (See p. 1008).

He then testified that this "farm" had neither a cow, a pig, nor horse:

"Q. *You haven't got a horse nor a cow nor a pig?* A. *I used to have.*" (See. p. 1008).

He was then asked concerning the time he came to Superior, but he did not even know when the Civil War commenced, nor when it closed, nor what states were in rebellion:

"Q. You say you came to Superior in 1860 or '61? A. About '61.

Q. *That was the close of the war?* A. *Yes, pretty close.*

Q. How long did that war last? A. That war lasted a little over four years, I think.

Q. *And that would be four years before* 1861? A. *Yes.*

Q. Who was that war between; who was fighting in that war? A. Do you want me to explain the presidents?

Q. I don't care anything about the presidents? A. Between the North and the South.

Q. Where was the South located? A. Well, South was located in the southern part of the United States, wasn't it?

Q. Do you know what states were in it? A. Kentucky and—

Q. *Ohio? What about Ohio?* A. *Yes. Virginia.*

Q. *Yes. Pennsylvania?* A. *Sure.*

Q. *Sure. And Illinois? Illinois was in the southern states, wasn't it?* A. *Part of it.*

Q. *New Jersey, wasn't it?* A. *Yes.*

Q. *And Delaware? Don't look around at these attorneys. Turn around this way. What about Delaware? Delaware was in the southern states, wasn't it?* A. *Isn't Delaware in the New Engand states?*

Q. *Delaware is in the New England states, you think?*

A. *Yes.*" (See p. 1010).

We merely call attention to this evidence to show the deplorable ignorance of this man that was called to testify as to these channels. His testimony on pages 1011 and 1012 constists of contradictions and silly statements that are not worth commenting upon. He was not under the influence of liquor, however, according to his version, because he had taken only one glass of beer as he got out of bed. (p. 1012).

THEOPHILE DIAN.

The last witness called by the State of Wisconsin on this point was a man by the name of Theophile Dian, whose testimony is found on page 1013. He came to the head of the lakes about fifty years ago and worked up at Millford. He worked in the saw mill of Victor Desimval (p. 1013). This witness testified that he worked on the tugs on which Captain Alfred Merritt and Captain Martin Wheeler were captains, in hauling stone from Fond du Lac to Superior entry. He said he worked one season with them (see p. 1015). On page 1016 he testified that they always went through "Millford" channel in hauling this rock from Fond du Lac to the Superior entry.

He admitted on his cross-examination that there were two channels, however. One, he says, was called the "channel" and the other was called the "Cut-off" (p. 1018). He admitted that he had no education and could not even read. He testified:

> "Q. But you can't read, anyway? A. No. I am one of the kind I never seen a school-house until I growed up to be a man." (p. 1019).

He was nearly eighty years old at the time he testified (p. 1018).

He testified concerning Alfred Merritt and Martin Wheeler as follows:

> "Q. Alfred Merritt and Martin Wheeler were good navigators, weren't they? A. *The most of them was captains.*
>
> Q. *I say, they were good navigators?* A. *They were supposed to be.*

Q. *So far as you know they were?* A. *Yes.* (See p. 1021).

We think it unnecessary to call further attention to the testimony of this witness. He was one of the roustabouts who came down one channel with Captain Wheeler and Alfred Merritt and on the same boat or rather on the scows that they were towing. while, according to the captains' testimony, they came down an entirely different channel. We think the friendliness of this childish old man for John Bardon very likely had a great deal to do with the channel he took when he came down on these rock scows; and with reference to his relation to John Bardon he said:

"Q. Who asked you to come here and talk? A. Mr. Bardon.

Q. John Bardon? A. John Bardon.

Q. How long have you known John? A. I know him when he was a boy that high (indicating).

Q. That is about three feet high. You have known him since he was about three feet high? A. Yes, sir.

Q. Pretty friendly with John? A. Always been a good friend. I know him and I know his brother Jim and I know his brother Tom.

Q. You know Tom and Jim both? A. I know them all well." (See p. 1024).

This finishes our comment upon the testimony of the witnesses called by the State of Wisconsin upon the question of channels, and we believe we are justified in saying that the Record shows that not one really competent witness was called by the State of Wisconsin to testify on this point in this case.

IN CONCLUSION.

1. In conclusion, we submit that the constitutional boundary as fixed by the Acts of Congress runs midway between the shores of the waters in question; that such holding not only does no violence to the construction of the acts fixing the constitutional boundary, but, on the other hand, is in entire harmony therewith; that this is borne out by the long acquiescence of the people and by the maps published in the earliest times and through a long series of years, by the authorities of both States, and by the acquiescence and recognition of the people of both of such States; that the mouth of the river, as referred to in these Acts of Congress was and is at the southwesterly of Big Island, where the parallel banks of the river cease and the waters definitely and permanently widen out between the shores of these bays, and from which point the waters of the lake are dominant absolutely and would be neither raised nor lowered if the river waters were diverted, and from which point, even if there existed in prehistoric times a river, it was drowned by the waters of the lake ages before these States were admitted to the Union. This midway line answers every call of the Acts of Congress, does justice and equity to both States and both cities and the respective shore owners and avoids unutterable confusion in jurisdiction and records, with the common understanding and acquiescence of the people for more than half a century.

These waters now constitute a harbor for all the traffic that comes to the head of the Lakes. It is unquestionably true that in the not distant future these waters will be the harbor for ships flying the flag of every nation of the world. A serious movement has already been undertaken for a deep waterway from Lake Superior to the Atlantic Ocean, such that any ocean steamer can come directly to the head of Lake Superior, and when such deep waterway is obtained, these very waters will be the natural harbor for the commerce of every nation. It is, for this reason, exceedingly important that this question be settled

upon a basis that will do equity and justice and result in the least confusion.

Wisconsin does not seriously contend, as we understand it, for any other line than a substantially midway line from Superior Entry to Grassy Point, and between these termin i we think Wisconsin must concede that the waters are nearly of a uniform depth, except, perhaps, for short depressions on either side of these pairs of points, caused by the scourings of the currents passing in and out through these comparatively narrow openings. If that be conceded, as we understand it is by Wisconsin, it must follow, on Wisconsin's theory, that the whole waters between these termini constitute the main channel of what they claim is a river, from the Entry to Grassy Point, and if that be true, no good reason occurs to us why likewise, from Grassy Point to the westerly of Big Island, the whole expanse of the water should not be considered as a main channel, even if, on any theory, these waters should be called a river. And of course, if all of these waters from the Superior Entry up were considered as the main channel of the river, still the State line as fixed by the Acts of Congress would be in the center, midway between the shores.

2. The overwhelming preponderance of the evidence is that the "main, navigated and navigable channel" from Grassy Point westerly was on a line marked A-G-B on Exhibit 1 and which we might add for convenience is on a line substantially midway between the shores, and above all, was on a line entirely south of the Minnesota dock line and on a line entirely north of the Wisconsin dock line, so that it left and leaves the dock properties of the two States entirely intact. Practically all the captains,

mates and pilots and those of such knowledge and intelligence that their testimony would be relied upon in the ordinary affairs of life agree that this midway line was the main line actually navigated.

Those of Wisconsin's witnesses whose testimony was in conflict with this were, as a rule, either those whose business primarily did not pertain to navigation, or excursionists or roustabouts, traveling more or less occasionally on these same boats with the captains, mates and pilots, but whose knowedge as to the lines of navigation could not possibly have been comparable with that of those whose primary business was navigation and the following of courses, or else the witnesses for Wisconsin were those who were clearly mistaken in the dates as to which they were testifying and whose recollection clearly was affected by dredging or improvements or change in the natural conditions.

We submit that from every viewpoint Minnesota is entitled to a decree determining the line in question to be entirely south of the Minnesota dock line and entirely north of the Wisconsin dock line.

Respectfully submitted,



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MAP

TOO

LARGE

FOR

FILMING

IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1918

NO. 18, ORIGINAL

STATE OF MINNESOTA,

Complainant,

vs.

STATE OF WISCONSIN,

Defendant.

IN EQUITY

BRIEF FOR THE STATE OF WISCONSIN

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IN EQUITY.

BRIEF FOR THE STATE OF WISCONSIN.

The present action brings this court for the third time to the consideration of the precise character of the waters which separate the cities of Duluth and Superior. On each of the two prior occasions, a determination was sought from the court as to whether the waters were a continuation of the St. Louis River or were a part of Lake Superior. In both cases, however, the court expressly put out of view the necessity of such decision. In the first case, that of *Wisconsin v. Duluth*, 96 U. S. 379, the court, after outlining the physical situation in lucid fashion, stated, at p. 380.

> "Whether these bays are considered as parts of Lake Superior, or as mere expansions of the river, is in our view immaterial."

In the more recent case of *Norton v. Whiteside*, 239 U. S. 144, it was said, at page 155:

> "The question whether the stretch of water and the channel through it be treated as a part of Lake Superior as asserted by the complainant, or be considered at the point in issue as a mere continuation of the St. Louis River, as asserted by the defendant (a view held by both the courts below) is wholly negligible."

The court must now determine whether the disputed waters are lake or river, and likewise ascertain the line of the boundary between Wisconsin and Minnesota running through them. The Enabling Act for the admission of Wisconsin in 1846 contained the words set forth in Wisconsin's Answer and Counterclaim:

> "thence through the centre of Lake Superior to the mouth of the St. Louis River; thence up the main channel of said river to the first rapids in the same, above the Indian village, according to Nicollet's map."[1]

The court must answer two questions arising under this language: (1) Where was "the mouth of the St. Louis River" located, in the mind of Congress in 1846? (2) Where did Congress conceive that "the main channel of said river" lay in that year?

I

"THE MOUTH OF THE ST. LOUIS RIVER" WAS AN UNAMBIGUOUS TERM, DEFINITELY UNDERSTOOD AND INTENDED TO DESCRIBE THE SPACE BETWEEN WISCONSIN AND MINNESOTA POINTS OR THE SO-CALLED "ENTRY", PRIOR TO THE ADOPTION OF THE ENABLING ACT IN 1846, AND CONTINUOUS PRACTICAL CONSTRUCTION OF THE TERM SINCE THEN HAS CONFIRMED THIS TO BE THE MEANING OF THE TERM.

To accept the assumption that pervades the first eighty-five pages of the brief of the learned counsel for the State of Minnesota that at the time of the adoption of this Enabling Act Congress had any doubt as to the location of the mouth of the St. Louis River, would be to ignore the plainest implications of

[1] Record page 13.

the first half century of American history. Counsel say in their brief:

> "The acts of Congress *do not locate the mouth of the St. Louis Rived.* The Nicollet map * * * *does not locate the mouth* of the St. Louis River."[1]

We submit that this term then, and for many years had, described one of the primary monuments, if not the primary, natural monument in this great expanse of the northwestern territory. "The Fond du Lac," "the bottom of West Bay," "the mouth of the St. Louis River," "the head of Lake Superior," were unambiguous terms of fixed and definite historic, diplomatic, and popular significance. The testimony upon this point is so full and convincing; the evidence so rich in variety, endowed with such wealth of absorbing interest, that the problem is one of selection and restraint, rather than of search, persuasion, or evidence.

The mouth of the St. Louis River, as will be amply proven, was so fundamental a term that it did not require location. The mass of haphazard conjecture; the poor stock of oral tradition and hearsay based on the uncertain memory of living witnesses seeking to recreate and reestablish the mental content of a legislative body that wrote the language in question three-quarters of a century before this record was made up, is overwhelmed by the long line of witnesses, of whose utterances and writings this court must take judicial notice. With something of splendid pageantry they throng to its attention from every rank and station and from most diverse quarters of the land. Savage and scientist, courtier and *coureur du bois,* combine to weave a strand of narrative in which the golden threads of heroic legend are woven with the coarser fibre of a sometimes bestial commonplace. Grenville, John Jay, John Quincy Adams, Clay, Webster, Benton, Calhoun, and Lewis Cass appear; the ascetic figure of Nicollet with his ribbon of the Legion of Honor,

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[1] Minnesota brief, p. 78.

burning out the slender stock of his vitality in his zeal for scientific attainment and the coveted admission to the Academy of France; David Thompson, gone to his too little distinguished grave, leaving a continent his debtor by the magnitude and accuracy of his scientific exploration; David Dale Owen, Schoolcraft, James D. Doty, now being honored as the "founder of Wisconsin," Alexander Ramsey, first governor of Minnesota Territory; Mackenzie, voyager to the frozen northern seas and discoverer of the mighty river that bears his name,—all pause to register confirmation of its long standing significance and bring to a converging focus from their diverse angles, one continuous, undeviating, historic meaning of the phrase. They go, leaving an atmosphere tingling with rich and colorful interest, electric with invitation to explore a thousand historic nooks and byways, while to us and to the court is left the more prosaic task of clothing the deductions from their experience in the sober phrasing of the law.

1. *The long standing importance of the St. Louis River.*

The importance of the St. Louis River is established by evidence of great antiquity. As early as 1671 we find it referred to upon the remarkable Jesuit map, *Lac Tracy ov Superieur,* as the route or river for going to the *Nadouessi,* or Sioux Indians, 60 leagues toward the setting sun.[1] A leading scientist and historian of Minnesota has stated:

> "The geographical position of Minnesota is such that for the last two hundred years it has been the *ultima thule* for western travelers and adventurers. • • • The route by the great lakes terminated at Fond du Lac, the head of the great system of inland lakes of North America."[2]

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[1] This map is found in Vol. 9, Executive Documents, 1st Sess., 31st Congress, 1849–1850, Doc. 69, op. p. 224.

[2] Historical Sketch of Explorations and Surveys in Minnesota, prepared by N. H. Winchell as an introduction to the Final Report of the Geological and Natural History Survey of Minnesota dated 1883, Ch. I, p. 1.

Nicollet, upon whose map the boundary was located, stated:

> "The districts watered by the Vermillion Lake river and St. Louis river, were, from time immemorial, the way of communicating with the interior as long as the Indian trade was in the hands of the French or the British."[1]

David Thompson, astronomer and surveyor for the International Boundary Commission, arguing for the adoption of the river as the line between the United States and Canada, made affidavit on June 3, 1827:

> "The river St. Louis; which last is, in fact, from ancient times to the present day, the great high road of the majority of the natives."[2]

Commissioner Barclay, in his argument based upon the affidavit, refers to "the superfluous labor of adducing proof of the antiquity of the route by the St. Louis River • • • a fact as notorious as are the name and situation of that river."[3]

2. *The St. Louis River and the mouth of the St. Louis River in connection with the diplomatic history of the United States prior to 1846.*

The exigencies of American diplomacy were such that after the adoption of the constitution but a little time elapsed before attention was directed to the zone of our present controversy. In 1794 Lord Grenville proposed to Chief Justice Jay of this court, then commissioned as special ambassador to England, that the mouth of the St. Louis River designated by the current synonym, "the bottom of West Bay" of Lake Superior, should constitute

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[1] Executive Documents, 2nd Sess., 28th Cong., Vol. II, 1844–45, Ex. Doc. 52, p. 108.

[2] Executive Documents, 2nd Sess., 25th Cong., Vol. 11, 1837–1838, Doc. No. 451, p. 118.

[3] Id., sec. 106, p. 75.

one of the points in the international boundary, and a most interesting map was submitted by Mr. Jay to illustrate what he conceived the effects of such arrangement of the boundary to be.[1] Some effort was made by the British commissioners in connection with the Treaty of Ghent in 1814 along similar lines,[2] but Henry Clay, John Quincy Adams, and Albert Gallatin and their associates took the position that they were not authorized to negotiate with reference to change of boundaries.[3] But as a part of the treaty finally adopted, its 6th and 7th articles provided for the appointment of commissioners to adjust and determine the boundary line through and beyond Lake Superior.[4]

a. The Porter-Barclay Commission and its report.

Under this treaty, Peter B. Porter was commissioned on behalf of the United States January 16, 1816, and John Ogilvy on behalf of Great Britain June 30, 1816. Their first meeting was held in November, 1816.[5] The British commissioner first appointed died in September, 1819, and was succeeded by Anthony Barclay, who appeared at a meeting of the board on June 30, 1820.[6] The earlier labors of the commission were concerned with the more easterly portion of the boundary. These were concluded on June 18, 1822.[7] Thereafter, and until their final adjournment on December 24, 1827, their controversy sheds most significant light upon the understanding and usage current practically a century ago of the term, with whose meaning we are

[1] *American State Papers, Foreign Relations,* Vol. I, p. 492.
[2] Id., Vol. III, p. 709.
[3] Id., p. 712.
[4] Id., p. 747.
[5] Moore, *History and Digest of International Arbitrations,* Vol. I, p. 163.
[6] Id., p. 165.
[7] Id., p. 166.

now concerned, "the mouth of the St. Louis River." The vicissitudes of their negotiation are set forth by Mr. Moore in the sixth chapter of his work above referred to,[1] and an interesting narrative covering the same subject matter, apparently based on critical and exhaustive research was written by Annah May Soule.[2]

We direct the attention of the court, however, to the original proceedings of the commissioners themselves. After a lapse of something over ten years, on the 2nd day of July, 1838, President Van Buren, in response to a resolution of that body, laid before the House of Representatives the separate reports of the commissioners with a detailed statement of their points of difference.[3]

From the report of the American commissioner, it appears that the Treaty of 1783, which was "by the treaty of Ghent, made the guide and rule of their proceedings," fixed the boundary between the United States and Canada in part—

> "through Lake Superior, northward of the isles Royale and Philipeaux, to the Long lake; thence, through the middle of said Long lake, and the water communication between it and the Lake of the Woods, to the Lake of the Woods; thence through the said lake, to the most northwestern point thereof."[4]

Their second point of difference regarded the course of the boundary from Lake Superior to the Chaudiere falls, the American commissioner being of one opinion,—

> "and the British commissioner being of opinion, that from Lake Superior the boundary should enter the mouth of the river St. Louis, and thence proceed up that river, and by

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[1] Id., pp. 171–190.

[2] *The International Boundary Line of Michigan*, by Annah May Soule, Vol. 26, *Michigan Pioneer and Historical Collections*, pp. 597–631, and especially p. 625.

[3] Executive Documents, 2nd Sess., 25th Cong., Vol. 11, 1837–1838, Doc. No. 451.

[4] Executive Documents, 2nd Sess., 25th Cong., Vol. 11, 1837–1838, Doc. No. 451, p. 3.

the most continuous water communication, to the said Chaudiere falls."[1]

And reference is again made to the opinion of the British commissioner,—

"that the boundary, after passing to the northward of Isle Royale, should return southwardly and westwardly through Lake Superior, and enter the mouth of the river St. Louis, which discharges into Lake Superior at its southwestern extremity, called Fond du Lac."[2]

Mr. Porter undertakes "to show affirmatively that the St. Louis route could not have been the one intended by the parties to the treaty of 1783." He urged:

"It will require no little stretch of imagination, and, at the same time, be paying but a poor compliment to the wisdom and consistency of the distinguished men who formed the treaty of 1783, to suppose that, in tracing a line from the head of St. Mary's to the mouth of St. Louis river, they would make so great a deviation from the plain and obvious course."[3]

And he argued;

"The evidence of the maps, instead of supporting, will, it is believed, be found to militate most decidedly against the pretensions of the St. Louis river as the boundary. It is worthy of observation, that all the old maps, although in many other respects discrepant and erroneous, are remarkably uniform and correct in their delineations of the southwestern parts of Lake Superior, and of the river St. Louis. *They all represent this river as emptying into the extreme southwestern bay, or projection of the lake, called Fond du Lac;* they all describe it to be (what in truth it is) much the longest stream that discharges itself into lake Superior; and they all concur in giving to it the name of the river St. Louis. And would not the parties to the treaty of 1783, if they had intended this large and well

[1] Executive Documents, 2nd Sess., 25th Cong., Vol. 11, 1837–1838, Doc. No. 451, p. 4.

[2] Id., p. 20.

[3] Id., p. 21.

known river as a part of the boundary, have so expressed themselves?"[1] (Italics ours)

He refers to the Pigeon river,—

"which empties into lake Superior, abreast of Isle Royale, and about 80 leagues to the northeast of the mouth of the St. Louis river, or Fond du Lac."[2]

The argument of the American agent, of which an extract appears, refers to the determination of the British commissioner expressed at a meeting in Montreal in October, 1824, "to explore a route far to the south of the Grand Portage, viz: the Fond du Lac or St. Louis river route."[3] Eleven maps are set forth in this document, which employ a variety of designations with reference to the St. Louis River. A letter from William McGillivray to John Hale is set forth in full,[4] in which it is said:

"Into the west bay of lake Superior, known by the name of *Fond du Lac*, falls the river St. Louis, by far *the largest* stream which that lake receives into its bosom."[5]

And again it is said:

"If the route by the river St. Louis, or Fond du Lac, could be established as the boundary, it would be gaining a great extent of country; the distance, computed from the Grand Portage to *Fond du Lac*, is eighty leagues."[6]

This, as we shall see, was incorporated into the speech Thomas H. Benton made on the floor of the Senate February 2, 1843. There is also set forth the report and argument of the British commissioner,[7] the essence of whose position is not unlike that of the State of Minnesota in the present controversy. Indeed,

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[1] Executive Documents, 2nd Sess., 25th Cong., Vol. 11, 1837–1838, Doc. No. 451, p. 22.

[2] Id., p. 23.

[3] Id., p. 26.

[4] Id., pp. 34–36.

[5] [6] Id., p. 35.

[7] Id., p. 40 *et seq.*

counsel have caused a portion of this report to be introduced in evidence.[1] By some singular misapprehension, however, they seem to have confused the argument of the British commissioner with the findings of the boundary commission itself, for we find it stated in their brief:

> "In this report, made in 1827, therefore, the commission clearly considered these waters a *lake* and not a river."[2]

Inasmuch as we shall find that the position of the British commissioner was subsequently abandoned by his government, counsel have in effect thus inadvertently cited to this court the argument of the losing side as the decision of the tribunal itself. The expression in the Treaty of 1783 to which the British commissioner sought to relate the St. Louis River was "the Long Lake" which has been quoted above, and the gist of his argument was directed to the establishment of the proposition that the estuary of the St. Louis River was the so-called Long Lake referred to in the Treaty of 1783. It becomes interesting, therefore, to note that the efforts of the British commissioner went no further than to seek to establish that the bay of Superior, or the bay of Superior and Duluth combined, constituted the Long Lake intended by the Treaty of Paris, for we find, as a portion of the proposed boundary detailed by him, in section 18 of Document No. 451, that such line should pass—

> "through the middle of the Fond du Lac, to the middle of the *sortie* or mouth of the estuary or lake of St. Louis river; thence, up the middle of the said lake and river, passing, midway, between the points No. 1 and No. 2, and southwest of the islets No. 3, No. 4, No. 5, No. 6, and No. 7; thence, midway, between the points No. 8 and No. 9; thence, through the middle of the said river, midway, between the points No. 10 and No. 11, and, midway, between points No. 12 and No. 13; thence, between the island No. 12 and island No. 14; thence, up the middle of the east channel, passing

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[1] R. pp. 988–89.

[2] Minn. brief, p. 83.

northwest of island No. 15 and island No. 16, and west of the point No. 17; thence, east of the island No. 18 and island No. 19, southeast of island No. 20, and between islands No. 21 and No. 22.''[1]

To properly understand and interpret the foregoing description of his proposed boundary line, it should be read in connection with Minnesota's Exhibit 59, which is entitled, ''A true map of part of the survey made under the 7th article of the Treaty of Ghent, by order of the commissioners under the 6th and 7th articles of the Treaty of Ghent. David Thompson, Surveyor.'' This map appears in Vol. VI of Mr. Moore's work above referred to as map 36. The attention of the court is directed to the reproduction of the map in that volume, rather than to the photographed exhibit, because of the larger scale and because of the fact that the map in Mr. Moore's book shows the various numbered stations designated very clearly. While we shall later show that this description is of decisive importance on the question of locating the main channel of the St. Louis River, its especial interest and significance at this point lies in the fact that the course is designated as ''through the middle of the Fond du Lac,'' which is the description of the waters outside of Wisconsin and Minnesota Points, as appears from the context; thence, ''to the middle of the sortie or mouth of the estuary or lake of St. Louis river,'' indicating that while the necessities of his argument required the British commissioner to characterize these waters as a lake, both he and the great scientist and geographer, David Thompson, by whom or under whose direction the survey was made and the map prepared, considered the waters as a tributary or part of the St. Louis River, for they are referred to as ''the estuary or lake of St. Louis river.'' ''Estuary,'' we find in the Century Dictionary, is defined as—

''that part of the mouth or lower course of a river flowing

[1] Executive Documents, 2nd Sess., 25th Cong., Vol. 11, 1837–1838, Doc. No. 451, sec. 18, p. 45.

> into the sea which is subject to tides; specifically an enlargement of a river channel toward its mouth, in which the movement of the tides is very prominent."

Stations 8 and 9 are the designations of Rice's Point and Connor's Points, respectively. And we find that from this point on, even the British commissioner treated the waters as purely and solely river and not lake, because the course delineated is, "thence, through the middle of the said river, midway, between the points No. 10 and No. 11," No. 10 being the extremity of Grassy Point and No. 11 being a point on the Wisconsin shore directly opposite. References to the argument of the British commissioner are found in the Minnesota brief;[1] in fact, we find counsel citing the view of the British commissioner that the dividing line is "at the middle unless clear words to the contrary are used, whether the line be through a lake or a river."[2] It may be superfluous to do so, but we desire to call the attention of the court to the fact that the gist of the British commissioner's argument was directed to the establishment of the correctness of the doctrine later laid down by the Supreme Court of Iowa, referred to by this court and rejected as the law of the United States, in the case of *Iowa v. Illinois,* 147 U. S. 1, 12, 13. This argument in favor of a rejected view is found in section 65 of the document. We quote but a portion of a sentence.

> "* * * the desired advantage of security intended for both parties would, in many instances, be lost entirely to one of the parties, from the permanent course of a channel being contiguous to one bank and remote from the other, which would increase to one party and diminish to the other the protection which is the object of such a natural boundary; or, as in the former case of the uncertainty of the line, from the changing of the channel, such muniment would be

[1] Minn. brief, pp. 38, 39, 82, 83.
[2] Id., p. 82.

also uncertain and probably the source of perpetual controversy."[1]

Whatever may be the force or merit of the reasoning, it has long since lost possibility of adoption by this court.

There is embodied in the report a map[2] marked, "Estuary of the River St. Louis," showing the words continued practically to the area between Wisconsin and Minnesota Points. The court will also find that this map, which is marked "F," is indexed[3] as "Copy of the survey of the mouth of St. Louis river." This map, coupled with the one reproduced by Mr. Moore, will be referred to in our argument relative to the location of the channel of the river.

b. The Webster-Ashburton Treaty.

The significance of the maps and papers thus published as Document No. 451 is not confined to their illustration of definite usage of the term, "mouth of the St. Louis River," nor as evidencing decisively that the waters to Rice's Point and Connor's Point were treated on all hands as being river and not lake. We find that these maps, affidavits, and proceedings were made the basis of public action in two very widely diverging quarters. For a proper understanding of the circumstances under which they were so employed, it is necessary to trace briefly the further course of the negotiations that resulted in the settlement of the boundaries. In 1839 Congress directed inquiry to this portion of the boundary.[4] On December 24, 1839, President Van Buren stated in his annual message that he had called the attention of

[1] Executive Documents, 2nd Sess., 25th Cong., Vol. 11, 1837–1838, Doc. No. 451, p. 67.

[2] Id., op. p. 121.

[3] Id., p. 39.

[4] House Journal, 25th Congress, 3d Session, p. 396.

the government of Great Britain to the unsettled portion of the boundary, "from the entrance of Lake Superior to the most northwestern point of the Lake of the Woods."[1] In 1842, Mr. Webster and Lord Ashburton finally brought the matter to a settlement, and we find that No. 35 of the maps published in Vol. VI of Moore's *History and Digest of International Arbitrations,* is one of the Thompson maps, which shows the boundary under the treaty of Washington, and bears on its face the inscription, "Map of boundary agreed to by treaty, August 9th, 1842," with the signatures of Daniel Webster and Ashburton. This map, certified as one of those prepared under the 6th and 7th articles of the Treaty of Ghent, gives further confirmation to the position of Wisconsin as to the general understanding of the location of "the River St. Louis," because we find that name written across the southwestern extremity of Lake Superior, in the lower, left-hand corner of the map.

Nor are we left to mere inference from the signature of Mr. Webster to the map, for the conclusion that active consideration was again given to the St. Louis River as a possible course of the international boundary. We find that when President Tyler transmitted the Webster-Ashburton Treaty to the Senate for its consideration under date of August 11, 1842, he forwarded the correspondence that had led up to the adoption of the treaty.[2] Under date of July 16, 1842, Mr. Ashburton wrote to Mr. Webster and harked back to the controversy between Messrs. Porter and Barclay, saying:

> "The British commissioner, on the other hand, contended for a line from the southwestern extremity, at a point called

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[1] Executive Documents, 26th Cong., 1st Sess., Vol. I, Doc. No. 2, p. 4; *Michigan Pioneer and Historical Collections,* Vol. 26, p. 628.

[2] *Congressional Globe,* Vol. 12, pp. 2–30; Senate Documents, 3d Sess., 27th Cong., Vol. I, 1842–1843, Doc. No. 1. (A list of the papers accompanying the message and treaty is found at p. 26 of this document)

> le Fond du Lac, to the middle of the mouth of the estuary or Lake of St. Louis River; thence up that river."[1]

We also find a letter from Mr. Delafield to Mr. Frazer,[2] stating that the British commissioner intended to claim by the Fond du Lac route. And Mr. Ferguson advises Mr. Webster,[3] after stating that he had explored the country personally, that he saw no further obstacle to a final determination, "considering that Great Britain abandons her claim by the Fond du Lac and the St. Louis river."

President Tyler, in his message, had stated:

> "The British commissioner insisted on proceeding to Fond du Lac, at the southwest angle of the lake, and thence, by the river St. Louis, to the Rainy Lake."[4]

And stated that as a result of the treaty—

> "The region of country on and near the shore of the lake, between Pigeon river on the north, and Fond du Lac and the river St. Louis on the south and west, considered valuable as a mineral region, is thus included within the United States. It embraces a territory of four millions of acres, northward of the claim set up by the British commissioner under the treaty of Ghent."[5]

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[1] Senate Documents, 3d Sess., 27th Cong., Vol. I, 1842–43, p. 57.

[2] Id., p. 102.

[3] Id., p. 106.

[4] Id., p. 21.

[5] Id. See also Moore, Vol. I, p. 194; *Michigan Pioneer and Historical Collections*, Vol. 26, p. 629; Richardson's *Messages and Papers of the Presidents*, Vol. IV, p. 165.

c. Discussion of the Webster-Ashburton treaty and Porter-Barclay report in the Senate of the United States.

But the President's assumption of credit was not to go unchallenged. Within a week after the treaty was laid before the Senate, Thomas H. Benton launched a bitter and caustic attack upon the candor and veracity of an official paper which would make a merit of having saved four millions of acres of fine mineral land "northward of the claim set up by the British commissioner under the Ghent treaty."[1] This first assault occupies twenty-seven three-column pages of the Congressional Globe. We are not concerned with the animus of his attack, but his speech does emphasize the importance which the St. Louis River occupied in the mind of Congress at that time, just four years prior to the passage of the act whose meaning we are seeking to construe. And we find Benton then, on August 19, 1842, stating as a matter of history:

> "It so happened that, in the year 1790, the English traveller and fur-trader, Mr. (afterwards Sir Alexander) McKenzie, in his voyage to the Northwest, travelled up this line of water communication, saw the advantages of its exclusive possession by the British, and proposed in his 'History of the Fur Trade,' to obtain it by turning the line down from Isle Royale, near two hundred miles, to St. Louis river in the southwest corner of the lake. The Earl of Selkirk, at the head of the Hudson's Bay Company, repeated the suggestion; and the British Government, forever attentive to the interests of its subjects, set up a claim, through the Ghent commissioner, to the St. Louis river as the boundary. Mr. Barclay made the question, but too faintly to obtain even a reference to the arbitrator; and Lord Ashburton had too much candor and honor to revive it. He set up no preten-

[1] Appendix to Congressional Globe, Vol. XII, 3d Session, 27th Congress, 1842–43, p. 2.

sion to the St. Louis river, as claimed by the Ghent commissioner."[1]

Senator John C. Calhoun, apparently declining to join in a purely partisan attack upon the treaty, stated:

> "Our right has been acknowledged to * * * a large tract of country to the north and west of that lake (Superior), between Fond du Lac and the river St. Louis on one side, and Pigeon river on the other—containing four millions of acres."[2]

Mr. Buchanan appears to have been less reluctant to seize party advantage. We find him stating[3] that the Mitchell map published in 1755 was the map used by the commissioners in designating the boundary of the United States. This is the map attached as Appendix D to Mr. Barclay's report, found in Document No. 451. He refrains from discussing the boundary in the Northwest, saying:

> "The Senator from Missouri has already placed this part of the subject in so clear a light, that it would be a waste of time again to present it to the Senate."[4]

Mr. Benton was not satisfied with one excoriation, but returned to the charge a second time, apparently provoked by a speech of Mr. Choate which has not been preserved, which relied upon the affidavits and documents in No. 451. On February 2, 1843, speaking on the alteration of the boundary between Lake Superior and the Lake of the Woods, we find him referring to the map "hung on the Secretary's table," and which showed—

> "that from Lake Superior there are three routes (water and portage lines) leading from the west part of that lake to

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[1] Appendix to Congressional Globe, Vol. XII, 3d Session, 27th Congress, 1842–43, p. 2.

[2] Id., p. 51.

[3] Id., p. 105.

[4] Id., p. 108.

> the Lake of the Woods. • • • "at the St. Louis river, 240 miles south, at the western extremity of the Lake Superior. • • • The St. Louis river route is called *Fond du Lac*, because at the extremity of the lake."[1]

Then follow seven or eight affidavits employed before the Porter-Barclay commission, directing the attention of the Senate and of the public to the matter of this boundary. In addition to these, he discusses in detail eight treaties,[2] tracing the course of negotiation preceding the Porter-Barclay commission, and then exclaimed:

> "It was now that the absurd pretension to the St. Louis river as a boundary was brought forward • • •. the attempt was made to substitute the old trading route for the water communication—the very attempt which the Senator from Massachusetts (Mr. Choate) is now making, and for which he is using their affidavits!"[3]

Extended quotation is made from the affidavit of Mr. Wm. McGillivray,[4] with reference to the St. Louis River as a boundary, this being the statement found at p. 123 of Document No. 451. And in ironic sarcasm, he exclaims:

> "The words are—that, by this treaty, four millions of acres of fine mineral land, between Pigeon river and St. Louis river, northward of the claim set up by the British (Ghent) commissioner, are included within the United States. Very good! They were never excluded from the United States!"[5]

Mr. Cushing, from Mr. Webster's state, disposed of this portion of the boundary by the dignified statement, Feb. 28, 1843:

> "It is believed to have been settled in a manner honorable to the United States."[6]

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[1] Appendix to Congressional Globe, Vol. XII, 3d Session, 27th Congress, 1842–43, p. 132.

[2] Id., p. 134.

[3] Id., p. 135.

[4] Id., p. 136.

[5] Id., p. 138.

[6] Id., p. 215.

Mr. Choate, whose earlier remarks appear not to have been preserved *in extenso,* replied to Mr. Benton in connection with the discussion of the Oregon bill on February 3, the day following Mr. Benton's speech, and without detailing his argument we find that he likewise emphasized the importance of the Porter–Barclay papers. He says:

> "I find the evidence, then, first, in the executive document No. 451, 2d session of the 25th Congress, containing the proceedings of the commissioners appointed under the 7th article of the treaty of Ghent to determine the boundaries of the United States and the British possessions in North America. You know the history and the value of this document."[1]

And, summing up the argument in defense of the treaty, he says:

> "It puts an end to the long and harassing doubt whether the Dog lake, the Pigeon river, or the Fond du Lac, is the point on Lake Superior from which the line should set out westward."[2]

d. Address of territorial legislature of Wisconsin relative to Webster-Ashburton treaty, based on report of Porter-Barclay Commission.

We find the criticism of the treaty was not confined to the halls of Congress. Governor Doty, on December 4, 1843, sent a message to the Territorial Legislature of Wisconsin.[3] A committee was appointed which reported in considerable detail to the territorial legislature.[4] The contention was made[5] that the boundaries of the fifth state had been infringed by the Treaty of

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[1] Id., p. 227.
[2] Id., p. 229.
[3] *Wisconsin Historical Collections,* Vol. XI, p. 479.
[4] Journal of the Council, Wisconsin, 1843–1844, Appendix, Document D, p. 6.
[5] Id., p. 15.

August 9, 1842,—the Webster–Ashburton Treaty, the gist of the argument being that the Ordinance of 1787, by the fifth article, defined the boundary to be "the territorial line between the United States and Canada" "to the Lake of the Woods and Mississippi." And we find the statement:

> "The report of the commissioners * * * will be found in 11th vol. 'Executive Documents,' 1837–'38—No. 451,) and the committee will draw largely upon it in support of their views."[1]

For ten pages following the matter is discussed in detail, and upon the basis of this report we find an address to the Senate and House of Representatives was adopted, of such fiery and bristling character that one over-enthusiastic member of the territorial legislature seriously proposed that it should be entitled, "A declaration of war against Great Britain, Illinois, Michigan, and the United States."[2] This address was laid before the Senate of the United States on the 18th of March, 1844.[3]

In passing, notice should be taken of the fact that Benton had long been interested in the territory in question, having been the recipient of correspondence from Governor Doty as early as 1824. Doty, as will be pointed out elsewhere, had visited the mouth of the St. Louis River, and so described it in 1820. Benton, as we have seen, had given most exhaustive attention to the region in his discussion before Congress, and by words and maps had directed the attention of his fellow senators at least, to the same area. We may well believe that the echoes of the discussion by Benton, Buchanan, Choate, Calhoun, and Cushing, involving as it did the area about the St. Louis River and specifically referring to that stream by name, assisted Congress in reaching its conclusion as to the proper boundary of the state.

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[1] Id., p. 16.

[2] *Wisconsin Historical Collections*, Vol. II, p. 483, *The Boundaries of Wisconsin.*

[3] Id.

3. *Use of the term "Mouth of St. Louis River" by explorers, fur traders, travelers, and government officials, prior to 1846.*

Benton attributed the efforts of British diplomacy to acquire the historic St. Louis River route to the sagacious designs of the masters of those great *imperia in imperio*, the Hudson Bay Company and the Northwest Company, a reflex of those days of power when "the Nwt. was Legislator and King; it killed, hanged, stole, and violated."[1]

a. Alexander MacKenzie.

Doubtless the language he had in mind is found in *Voyages Through North America*, by Alexander MacKenzie:

> "It does not appear to me to be clearly determined what course the Line is to take, or from what part of Lake Superior it strikes through the country to the Lake du Bois: were it to follow the principal waters to their source, it ought to keep through Lake Superior to the River St. Louis, and follow that river to its source; close to which is the source of the waters falling into the river of Lake la Pluie, which is a common route of the Indians to the Lake du Bois: the St. Louis passes within a short distance of a branch of the Mississippi, where it becomes navigable for canoes. This will appear more evident from consulting the map."[2]

Obeying his injunction and turning to the map which divides the introduction from the narrative in chief, we find that the same delineates Lake Superior, denominates its southwesterly extremity as Fon du Lac, and shows the River St. Louis uninterruptedly designated as a river to the shore of the bay of

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[1] Perrault Narrative, *Michigan Pioneer and Historical Collections*, Vol. 37, p. 510, 587.

[2] *Voyages Through North America*, by Alexander MacKenzie, Introduction, p. Lviii.

Fon du Lac thus indicated. Earlier in his narrative, as if to leave no doubt as to his understanding, we find that the states with reference to Lake Superior:

> "* * * its Southern extremity, at the River St. Louis, is in latitude 46. 45. North, and longitude 92. 10. West."[1]

It is only necessary to turn to any of the maps introduced in evidence, and by reference to the latitude and longitude indicated, see that MacKenzie has thus fixed with precision the southern extremity of Lake Superior at the River St. Louis, which is but another expression for the mouth of the St. Louis River, at the entry between Wisconsin and Minnesota Points. MacKenzie, however, was not the only member of the fur trading fraternity who has recorded for our benefit the location of the mouth of the St. Louis River.

b. Jean Baptiste Perrault.

Jean Baptiste Perrault advises us that he had engaged himself in the year 1794 to Mr. Alexander MacKenzie for three years.[2] This contemporary and employe of MacKenzie, we are told in the year 1793, "built the fort at the mouth of the St. Louis river, afterward abandoned by the Northwest Company when compelled to leave American territory, and taken over by the American Fur Company at the conclusion of the War of 1812."[3] In his own narrative, the quaint flavor of the original being preserved in the translation, he states that with one Kay, he "went up from montreal with two Canoes to enter into fond du Lac Superieur, and

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[1] *Voyages Through North America*, by Alexander MacKenzie, Introduction, p. xl.

[2] Perrault Narrative, *Michigan Pioneer and Historical Collections*, Vol. 37, p. 570.

[3] Id., pp. Introduction 509–510.

to go to Lac de la Sangsue (Leech Lake)."[1] A rendezvous had been arranged with the second employe, "to meet him at fond du Lac about the middle of august." He details their journey from the river Brulee, "all night at the mercy Of the darkness, the sky overcast and the weather very cold."[2] And, coming to the identical location fixed a little over sixty years later as the mouth of the St. Louis River in the Enabling Act which we have under consideration, he continues:

> "About two hours before day, being unable to enter the riviere du fond du Lac * * *."[3]

Then again:

> "Upon entering the river The next day and doubling the point of the little lake, we saw a wintering-house."[4]

Opposite the page containing this statement, we find a crude attempt at cartography, in which he designates the water outside of Wisconsin and Minnesota Points as "F. du Lac Superieur." The "Riviere a Gauche" is likewise indicated on the map, and the little lake, or "petit Lac" is shown as well. For some fifteen pages he continues the account of his trip into the interior via the St. Louis River route. He begins his descent, having only "Two fawn-skins of wild rice, and that was too little to Carry us to the fond du Lac Superieur."[5] And we learn:

> "The next day we set out * * * we Camped at the entrance to the riviere du fond du lac."[6]

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[1] Perrault Narrative, *Michigan Pioneer and Historical Collections*, Vol. 37, p. 518.
[2] Id., p. 519.
[3] Id.
[4] Id.
[5] Id., p. 533.
[6] Id., p. 534.

Omitting the piquant narrative of his travels that intervened, we find the chronicle of his return to the point which engrosses our attention:

> "We therefore took our Outfit for lac superieur, and we entered the fond de Lac to go to the Lac de la Sangsue. Messr. sayer, cadotte baptiste, Cazelai, jos. Reaume, Laviolette, and ourselves, all arranged to occupy Different departments of fond du Lac. * * * mr. sayer getting the riviere du fond du Lac."[1]

We find him journeying back from Mackinac "toward Fond du Lac,"[2] and that he chronicles the return from the interior to Fond du Lac.[3] Varying the designation, he states:

> "We set out the Next Day for The entrance where we found mr. michel Cadotte * * *.
>
> "We sojourned awhile at The entrance, and the next day set out for the sault * * * ."[4]

While there, he says:

> "I engaged myself to winter at fond du Lac with 10 men in order to build there a fort which would be a depot for the fond du Lac region."[5]

And he states:

> "We arrived at fond du Lac the 6th day which was the 16th of August."[6]

He then details the construction of the fort at the Fond du Lac, and concludes:

> "All was ready on The arrival of mr. M'Kenzie, who came to fond du Lac in la Loutre, commanded by Capt. m'xwell, and bringing the merchandise for the outfits sent

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[1] Id., pp. 555–56.
[2] Id., p. 561.
[3] [4] [5] Id., p. 568.
[6] Id., p. 569.

out from Fond du Lac. * * * I left fond du Lac the 25th of July 1794."[1]

And says:

"I left mr. Cadotte at the portage, while we Continued on our way, to fond du Lac, reaching the fort the 14th of June of 1795 in the evening. I remained at the fort at fond du Lac for The space of a month."[2]

He speaks of associates whose "plan was to enter Fond du Lac Superieur."[3] And we learn "that Mr. Sayer of Fond du Lac withdrew from the Company."[4]

It is not pretended, of course, that this narrative had obtained such currency in printed form to shape contemporary usage, but we deem it important as preserving in authentic form the usage, expression, and designation of a man who passed and repassed year after year, and who links in curious and interesting fashion the gap between the possession of the British fur traders and American occupation. We are advised in the introduction that the manuscript was written at Schoolcraft's request, and of its pages Schoolcraft well says:

"They supply the long lapse intervening between the travels of Carver and Henry in 1763 * * * up to the beginning of 1820, when our government began to turn its attention to this neglected portion of our public domain."[5]

The labors of Perrault do more than bridge the gap in a literary way, because the fort which he constructed and which we are advised was denominated Fort St. Louis, is the same fort which is designated on Exhibit 59, one of the Thompson maps introduced by Minnesota, and likewise on their Bayfield

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[1] Perrault Narrative, *Michigan Pioneer and Historical Collections*, Vol 37, p. 569.
[2] Id., p. 570.
[3] Id., p. 574.
[4] Id., p. 577.
[5] Id., Introduction, p. 508.

map. We are advised that the curious may still find evidences of the existence of this fort, thus minutely described as having been built at the Fond du Lac, and Mr. Alfred Merritt, a witness for Minnesota, testified with particularity to its existence.[1]

c. David Thompson.

Nor are we left to the crude, uncultured literary efforts of Perrault for knowledge of the current meaning of the term, "Mouth of the St. Louis River." But we have the testimony of a man whom his biographers appear to be able to characterize only by superlatives,—David Thompson, whose signature appears upon Minnesota's Exhibit 59, and who is spoken of by Mr. Elliot Coues, in his volumes, *New Light on the Early History of the Greater Northwest*, as "David Thompson, the celebrated astronomer, geographer, explorer, and discoverer."[2] And in his preface to *David Thompson's Narrative*, published by the Champlain Society (Toronto), Mr. J. B. Tyrrell states that the book "is issued with the hope that it may assist in confirming David Thompson in his rightful place as one of the greatest geographers of the world."[3] His associate, John J. Bigsby, Secretary to the Boundary Commission under articles 6 and 7 of the Treaty of Ghent, in those most engaging volumes, *The Shoe and the Canoe*, published in 1850, says of him:

> "I afterwards travelled much with him, and have now only to speak of him with great respect, or, I ought to say, with admiration.
>
> "No living person possesses a tithe of his information respecting the Hudson's Bay countries, which from 1793 to 1820 he was constantly traversing. * * * he has a very powerful mind * * *."[4]

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[1] R. p. 121, fol. 134.

[2] Editor's Preface, p. xx.

[3] Preface, p. xix.

[4] *The Shoe and the Canoe*, by J. J. Bigsby, Vol. I, pp. 113–114.

He also states that he (David Thompson) furnished the geographical sketch of the northwest territories for MacKenzie's volume of travels.[1] Tyrrell says of him, that he—

> "travelled more than 50,000 miles in canoes, on horseback, and on foot * * *. While a good deal of this distance was made up of trips over ground that he might have been over before, advantage was always taken to make resurveys and check the correctness or accuracy of previous work."[2]

And again:

> "His surveys were not merely rough sketches sufficient to give some idea of the general character of the country, but were careful traverses made by a master in the art, short courses being taken with a magnetic compass, the variation of which was constantly determined, distances being carefully estimated by the time taken to travel them, and the whole checked by numerous astronomical observations for latitude and longitude."[3]

It is from the "luminous record of the life-work of so modest, so meritorious an explorer as Thompson was—of so scientific a surveyor and so great a discoverer,"[4] that we are privileged to draw our conclusion as to the scientific understanding of the location of the mouth of the St. Louis River, thus current a century ago.

In the Introduction to the Tyrrell Narrative,[5] we find Thompson's itinerary detailed into the St. Louis River, and that he "descended the latter stream to Fond du Lac House, in latitude 46° 44′ 2″ N., three miles up the river from Lake Superior," this of course being the fort constructed by Perrault. In his own narrative, Thompson tells of his entry into the St Louis River,[6] and his course is given in much detail, concluding:

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[1] *The Shoe and the Canoe*, by J. J. Bigsby, Vol. I, p. 115.
[2] *David Thompson's Narrative*, Introduction, p. lix.
[3] Id., p. lx, lxi.
[4] *New Light on the Early History of the Greater Northwest*, Preface, p. xxi.
[5] *David Thompson's Narrative*, Introduction, p. lxxvii.
[6] Id., p. 284.

"Near the mouth of the River is a Trading House of the North West Company under the charge of Monsr Lemoine; * * * This House is in Latitude 46. 44. 33 N. Longitude 92. 9. 45 W Variation 4½ degrees East. I have only set down my observations made at certain places, but they are numerous all over the survey, as every clear day and night, no opportunity was omitted of taking observations for Latitude, Longitude and Variation to correct the courses and distances of the survey. The Canoes that descend the River to the upper end of the Long Carrying Place, are carefully laid up, and there left, in like manner the Canoes that come from the Lake are left at the lower end. We found three large Canoes, and a north Canoe of 28 feet in length, much broken. This was too large for us, but we had no choice, we repaired it, and as we had only three men fitted it up with two oars, which have the force of four paddles, as we had now to encounter the Winds and waves of Lake Superior."[1]

Having checked the fall of the river, point by point, substantially to where it is intersected by the north and south course of the undisputed boundary line between Wisconsin and Minnesota, he concludes his course:

"Then 21 miles of current at 15 inches pr mile equal to 26 feet 3 inches, giving to the above part of the River St. Louis a descent of 417 feet 11 inches to Lake Superior."[2]

Thompson again refers to this trading house, saying:

"Having settled by observations the Latitude and Longitude of the trading house of St. Louis's river at the west end of Lake Superior; on the 12th of May we proceeded to survey the south side of the Lake." (May, 1798)[3]

We especially urge upon the court the examination of the map found in the pocket on the back cover of the Tyrrell Narrative, entitled "This Map made for the North West Company in 1813

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[1] *David Thompson's Narrative*, pp. 285–6.
[2] Id., p. 287.
[3] Id., p. 293.

and 1814 and delivered to The Honorable William McGillivray then Agent * * * comprising the Surveys and Discoveries of 20 years." There we find the Long Portage designated, between which and the house of the Northwest Company he states there are 21 miles, and the designation, "N. W. Co." lies immediately outside Minnesota Point. The calculation of the latitude and longitude may also be related to this map, showing with mathematical accuracy that the mouth of the St. Louis River lay in the latitude and longitude where Wisconsin contends that it lay in 1846 and 1848, and lies today.

d. Lewis Cass.

At page 118 of Document No. 451,[1] we find that Mr. Thompson swears, on the third day of June, 1827, that—

> "last year (1826) it was stated in the American papers, that two thousand of the natives met Governor Cass (of the Michigan Territory) at the estuary of the river St. Louis."

The accuracy of Mr. Thompson's statement in this respect is confirmed in the *Life and Times of Lewis Cass,* by W. L. G. Smith, published in 1856,[2] where we are advised that he was requested to "meet the Chippewas of the extreme north-west in council at Fon du Lac," and that "with Thomas L. McKenney, who was Associate Commissioner, he proceeded on his mission in July." Attention will presently be called to the account of this associate official, which has been formally introduced into evidence.[3]

The interest of order and correct perspective will best be served, however, by reference to a still earlier and, we think, more important visit of Governor Cass to the area now subject to judicial scrutiny. With the breakdown of the control of the British

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[1] Executive Documents, 25th Cong., 2d Session, Vol. 11, 1837–38.

[2] See page 174.

[3] Record p. 463.

fur traders in this region, following the War of 1812, elsewhere noted, it was natural that the interest and curiosity of the adventurous, hardy, and enterprising Americans of that day should be directed to this ancient and important locality. We find, indeed, that prior to the evacuation of the British, and as early as 1806, Lewis and Clark, in the modest report of their marvelous expedition across the continent, had called public attention to the Chippewas of this vicinity, saying—

> "They claim, also, east of the Mississippi, the country extending as far as lake Superior, including the waters of the river St. Louis."[1]

Mr. Lewis Cass, appointed governor of the territory of Michigan in October, 1813, a position which he occupied for nearly eighteen years or until July, 1831, leaving the position to become Secretary of War under President Jackson, was as the court knows, a member of the Senate of the United States from the state of Michigan at the time of the passage of the Enabling Act. His understanding of the location of the mouth of the St. Louis river is clearly evidenced by his personal usage of that term, but very certainly the influence of his usage may be presumed to have extended far beyond that. What more probable, that an able and influential member of Congress, with minute and detailed personal information of the locality in question, may have been relied upon by many of his colleagues in fixing their mental concept of the terms employed! His official correspondence with John C. Calhoun, who later sat with Cass as United States Senator in 1846, is of double significance. Under date of November 18, 1819, he wrote to Mr. Calhoun, then Secretary of War, proposing an expedition "to the extremity of Lake Superior," for the purpose, among others, of promoting more intimate acquaintance with the Indians of that region.[2] Mr. Cal-

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[1] *American State Papers, Indian Affairs*, Vol. IV, p. 718.

[2] *American State Papers, Indian Affairs*, Vol. 11, pp. 318–319; *Life and Times of Lewis Cass*, by W. L. G. Smith, pp. 118–121.

houn, as Secretary of War, sanctioned the expedition by letter of January 14, 1820.[1] Under date of October 21, 1820, Governor Cass reported in detail to Mr. Calhoun, describing their course:

> "From the Ontonagon we proceeded to the Fon du Lac, passing the mouths of the Montreal, Mauvais, and Brule rivers, and entered the mouth of the St. Louis, or Fon du Lac river, which forms the most considerable water communication between Lake Superior and the Mississippi."[2]

This definitive expression as to the water whose character is now in dispute is contained in the report:

> "The St. Louis river is a considerable stream, and for twenty-five miles its navigation is uninterrupted. At this distance, near an establishment of the South-West Company, commences the Grand Portage, about six miles in length, across spurs of the Porcupine ridge of mountains. One other portage, one of a mile and a half, and a continued succession of falls, called the Grand Rapids, extending nine miles, and certainly unsurmountable, except by the skill and perseverance of Canadian boatmen, conducts us to a comparatively tranquil part of the river."[3]

At page 126 of *The Life and Times of Lewis Cass*, we learn that in General Cass's party were Henry R. Schoolcraft as mineralogist, and James D. Doty as official secretary.

e. James D. Doty.

The official journal of this expedition, from the pen of James Duane Doty, has been more recently published.[4] From this journal we are advised that among other purposes of the expedition,—

> "The topography of the country is to be accurately ob-

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[1] *American State Papers*, id., p. 319; *Life and Times of Lewis Cass*, p. 122.

[2] *Life and Times of Lewis Cass*, p. 134.

[3] Id., p. 135.

[4] *Wisconsin Historical Collections*, 1895, Vol. XIII, pp. 163–219.

served and noted and collect all the information possible necessary to form a complete map of this section of the Union."[1]

And again, we find this official delineation of the physical features:

"We embarked at ¼ before 3 this morn, and with the aid of a little fair wind we reached the Fond du Lac river at 12 o'clock, 48 miles from the river Brule or Burnt wood which we passed yesterday. The mouth of the river is S. 60 W. a short distance. We steered N. 70 W. 2 miles, in which it widens from ¼ to 1 mile. We came to an Indian village of 7 lodges where Indians were obtained to assist us in conveying our things over the portage. This river is very crooked, and is enclosed on both sides by mountains. About 5 miles up we passed an old establishment of the N. W. Co's which they deserted during the late war. We reached the S. W. Co's establishment an hour before sunset where we are encamped, 21 miles from the m. of the river, and making 63 miles travel this day. In ascending the river the wind was frequently fair."[2]

f. Henry R. Schoolcraft.

Henry R. Schoolcraft, who was designated as the mineralogist, but who proved in reality to be the popular historian of the trip, printed and published at Albany in 1821 a work entitled *Narrative Journal of Travels Through the Northwestern Regions of the United States*, in which, under date of July 5, the forty-third day of the expedition, we find the statement:

"At eleven o'clock a northeast wind arose which enabled us to hoist sail, and an hour afterwards we entered the mouth of the river St. Louis, which enters the lake at the head of the Fond du Lac."[3]

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[1] Id. p. 164.

[2] Id. p. 202.

[3] *Narrative Journal of Travels Through the Northwestern Regions of the United States*, by H. R. Schoolcraft, p. 195.

And again, the author says, referring to the Cabotian mountains:

> "It is this barrier which we have to cross with our baggage and canoes in ascending the St. Louis river for this precipitous stream has worn its rugged channel through these mountains, and throws itself into Lake Superior at its extreme head. The mouth of this river is not more than a hundred and fifty yards wide, but immediately on entering, it expands to a mile, and continues this width for five or six miles, and this part of it resembles a lake more than a river, having little or no current,—shallow in many places, and filled with aquatic plants."[1]

And again:

> "Three miles above the mouth of the St. Louis river, there is a village of Chippeway Indians, of fourteen lodges, and containing a population of about sixty souls. * * *
>
> "A short distance above this village, on the opposite side of the river, are the ruins of one of the old forts and trading houses of the northwest company, which was abandoned about six years ago. The site is elevated and pleasant, but the American company have not thought proper to re-occupy it, and have fixed their establishment for the Fond du Lac department, eighteen miles above, where the first portage commences. By this change of site, they save the labour of loading and unloading their canoes at the mouth of the river."[2]

And he states:

> "The following are the stationary distances of the route.

	Miles	Tot. Miles
Mouth of St. Louis River, or (Fond du Lac,)	21	174
Chippeway village,	3	177
American Fur Company's Establishment,	18	195"[3]

The objects of the journey were likewise stated by him, "to survey the topography of the country, and collect the materials for

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[1] Id., p. 201.
[2] Id., pp. 202–203.
[3] Id., p. 204.

an accurate map—to locate the site of a garrison at the foot of Lake Superior, and to purchase the ground."[1] Professor Douglass' Topographical Report and Map, referred to at page xiv of the preface and referred to again in 1832, so far as our search has extended, apparently still remains unpublished. We shall see, however, that a military reservation at the foot of Lake Superior was to be made years afterward, but we are without evidence as to whether it was a result of the Cass-Schoolcraft observations or not.

g. H. W. Bayfield.

Three years following the first visit of Governor Cass with Messrs. Doty and Schoolcraft, the area in question was subjected to examination by Lieutenant H. W. Bayfield, whose map was introduced in evidence as Minnesota Exhibits 7 and 8, and whose qualifications are vouched for in the brief of counsel.[2] A perusal of the Report of the Chief of Engineers of the United States Army for 1916[3] might lead us to moderate somewhat the enthusiasm expressed by counsel at page 53 of their brief for this "very wonderful piece of work." It is there said of his charts: "They were not in general use by the masters of American vessels. The charts were of little use to the navigator." We have, however, no disposition to question the accuracy of his observations, and surely counsel for Minnesota will welcome with much enthusiasm Captain Bayfield's more detailed views as to this locality. These we find most convincingly set forth in a paper on the *Outlines of the Geology of Lake Superior*,[4] a copy of which

[1] *Narrative Journal of Travels Through the Northwestern Regions of the United States*, by H. R. Schoolcraft, Preface, p. xiii.

[2] Minn. brief, pp. 52–53.

[3] Annual Reports of the War Dept., Vol. II, p. 1817.

[4] Transactions of the Literary and Historical Society of Quebec, published in 1829. Vol. I.

will be found in the Library of Congress. It is interesting to note his acquaintance with the visits of Mr. Schoolcraft and Dr. Bigsby, noted at page 2 of his paper, and his familiarity with the work of Mr. Schoolcraft which the paper discloses; also his knowledge of Mr. Thompson, between whom and Commander Bayfield an examination of the original files of the Porter-Barclay Boundary Commission in the archives of the State Department discloses some correspondence was maintained. Turning to his paper, having discussed the formation of the islands of the Twelve Apostles, he says:

> "From these islands to the St. Louis, the same formation continues, and it is found in cliffs, occasionally, on the north coast opposite, for at least 20 miles to the north eastward of the entrance of that river. We ascended the St. Louis, about 15 miles in a direct line from its entrance. The first rapids are about 1½ or 2 miles further and are over this rock."[1]

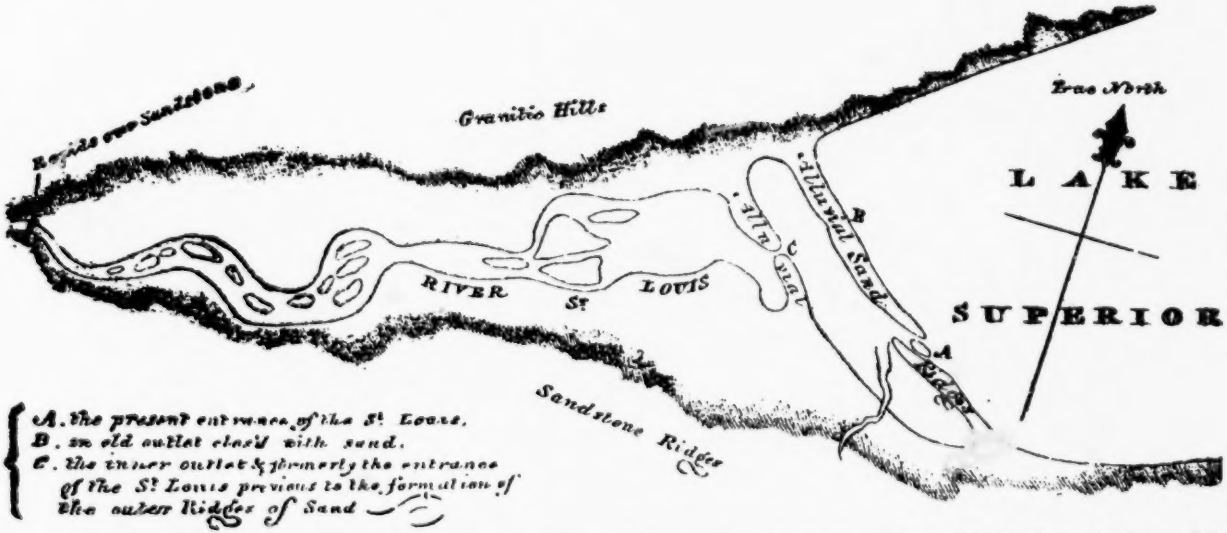
Further on, he details his impressions more circumstantially, but so that there may be no doubt in the mind of the reader of his understanding as to the formation, he advises us that—

> "The following rough eye sketch, from memory, will probably serve to make us understood, and explain the nature of the constantly increasing alluvial deposits of the St. Louis."[2]

And this sketch, by reason of the great emphasis that has been placed upon the map of Commander Bayfield, we reproduce on the page following, the same being taken from the rear of the volume referred to. This map does not leave the matter to conjecture, for the mouth of the river—"the present entrance of the St. Louis"—is plainly lettered "A."

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[1] *Transactions of the Literary and Historical Society of Quebec*, published in 1829. Vol. I, p. 16, 17.
[2] Id., p. 32.



Reproduction of map prepared by H. W. Bayfield to illustrate article on geology of Lake Superior, found in Transactions of Literary and Historical Society of Quebec, Vol. I.

h. Thomas L. McKenney.

We return now to the second visit of Governor Cass, referred to in Mr. Thompson's affidavit, whose description by his associate Thomas L. McKenney is before the court by formal introduction in evidence.

"When within about ten miles of the end of the lake, we noticed a line stretching from shore to shore, the north and south shores being about ten miles distant, that seemed like a narrow shadow—not very well defined. As we approached nearer, it became more substantial, and when four miles off, it was a well defined beach, with trees, pine and aspen, scattered irregularly over it from one end to the other, and this was the *Fond*, or bottom—or, more properly, head of Lake Superior. The river St. Louis enters it through this beach, which is of sand, and which is from thirty to two hundred yards wide, and diagonally—the mouth of the river being not more than two hundred yards wide.

"We arrived at the head of the lake at four o'clock, and pitched our tents on the south-western side of the beach, which is washed by the river St. Louis. And here we were met by about thirty Indians. We were gladly received by them, and made them presents, as usual. The chief of the Fond du Lac band was here, and had a little son with him, of whom he was passionately fond. He wore his father's medal, and was never from his side; and when he first met us, he could scarcely take time to tell us how glad his heart was made by our arrival, before he picked up his little boy, who is about four years old, and pressed him through the crowd of Indians that he might shake hands too. We were soon told by him, that *it was his son*.

"The north shore of the Fond du Lac is mountainous, and rolls on beautifully and boldly far beyond where the beach crosses; whilst the south is more level and less elevated. The beach was doubtless formed by the meeting of the current of the river, and the waves of the lake. This was the quiescent part of the waters, and here the deposite was made, and here, doubtless, the same cause will continue to keep it. It is a beautiful termination. The beach does not make directly across, but forms a curvature of moderate indentation.

The river passes out about two-thirds of the distance from the south to the north side of the lake.

"We are now within twenty-four miles of our treaty ground; of the American Fur Company's establishment, called the Fond du Lac department • • • ."[1]

In the table of distances, beginning at page 271 and concluding at page 273 of the McKenney work, we find the last course given at page 273:

"Fond du Lac—mouth of River St. Louis—9 miles" with the statement following:

"From the Fond du Lac to the American Fur Company's establishment on the St. Louis river, is twenty-four miles."

The interest and attention of Mr. Cass in this vicinity did not end with the two personal visits made by him in 1820 and 1826, respectively. Through him, orders were issued for an expedition by his former associate, Mr. Schoolcraft, and while there was some delay in organizing the enterprise, the expedition was finally made to this vicinity and an account of the same is found in Schoolcraft's second volume, entitled, *Discovery of the Source of the Mississippi*, published in 1834. His formal instructions were given under date of August 9, 1830.

"Whether it will be necessary for you to go beyond Fond du Lac, you can best determine on your arrival there."[2]

In Chapter II of his work, it is said:

"In travelling through this lake, in boats or canoes, the shores are followed round. The distance from Point Iroquois to the entrance of the St. Louis river of Fond du Lac, is estimated at 490 miles."[3]

And further on he states:

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[1] Record p. 463; McKenney's *Tour to the Lakes*, p. 270.

[2] *Discovery of the Source of the Mississippi*, by Henry R. Schoolcraft, Preface, p. iii.

[3] Id., Ch. II, p. 18.

"The expedition entered the mouth of the St. Louis river on the 23d of June."[1]

At page 22 and following, we find, woven into his preliminary observations, a portion of the manuscript account of Perrault, to which reference has already been made.

Having described this vicinity so thoroughly, however, on the occasion of his earlier visit, it was not to be expected that Mr. Schoolcraft should describe in detail the Fond du Lac a second time. He refers again, however, to the work of his associate, Captain Douglass, on the earlier expedition, and states:

> "But the result of his observations, has not been given to the public. The route has been again delineated with care, in its whole extent, from Fond du Lac to Sandy Lake, during the present year, by Lieutenant James Allen, of the U. S. Army, and will with his other delineations, be transmitted for the use of the Topographical Bureau at Washington."[2]

This map referred to at page 122, we doubt not, is the same map found a page or two preceding, which shows a delineation of the Fond du Lac River and Fond du Lac, the latter lying outside of Wisconsin and Minnesota points.

i. Lieut. James Allen.

It is to Lieutenant Allen, thus referred to, that we are indebted for the more detailed account of the objects of our investigation. We find that under date of April 11, 1834, Mr. Cass, in obedience to a resolution of the House of Representatives of the 28th of March, 1834, communicated to the House the "Report of Lieutenant Allen of the Army, of H. R. School-

[1] Id., p. 21.
[2] Id., p. 122.

craft's exploration of the country at and beyond the sources of the Mississippi, on a visit to the Northwest Indians in 1832."[1]

Opposite page 312 of this report, the court will find a map, entitled "Map of the Route passed over by an Expedition into the Indian Country in 1832 to the Source of the Mississippi, by Lieut. J. Allen, U. S. Inf." And here again, we have a delineation of Lake Superior lying outside of Wisconsin and Minnesota Points, and designated as Fond du Lac Bay, while the river is denominated "St. Louis River." From this report we learn that

> "The route of the expedition was up Lake Superior to Fond du Lac; thence up the Fond du Lac river ninety-one miles."[2]

A daily journal of the expedition commences on June 7, 1832, the first entry being found at page 315, and continuing to page 344 of this volume of the State Papers. Under date of June 23, it is said:

> "The beach and bank round the end of the bay are very low and flat, and the entrance to Fond du Lac river is not discernible a short distance from the shore."[3]

And again:

> "The mouth of the Fond du Lac river, or "The Entrance," as it is called by the traders and voyageurs is about eighty feet broad, but is shallow, and would not admit a vessel of three or four feet draught. It expands immediately into two bays, to the right and left, separated from each other by a small island near and directly in front of the entrance. The mouth seems to be in the very end of the lake, and hence it is properly called *Fond du Lac* river. A river that enters the left bay of The Entrance is also as aptly called *'La Riviere a Gauche.'* The bays to the right and left lie in their length parallel to the shores of the lake,

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[1] *American State Papers, Military Affairs,* Vol. V, p. 312.
[2] Id., p. 313.
[3] Id., p. 325.

from which they are only separated by low sandy tongues of land, very much attenuated, and sustaining a few little scattering pines. The point to the right, entering, is near fifty yards broad near the end, but it afterwards narrows, and runs back for about two miles with a breadth of from twenty to forty yards. Out course was through the right hand bay, N. 60° W. for four miles, to a strait one hundred yards broad, by which, in a distance of two hundred yards, we entered another bay, long and narrow, and which contracted gradually to the very narrow, crooked channel of the river.

"There was formerly a trading house near the entrance, but it has been abandoned and destroyed, and the present house for all the Fond du Lac country is twenty miles above.

"The river for this distance is very crooked and winding, but its general course up is southwest; the channel is of variable breadth and generally deep."[1]

j. William Johnston.

The year following, another protégé of Mr. Schoolcraft's was to traverse these well known waters. William Johnston was a half-breed, whose sister was the wife of Mr. Schoolcraft. His letters to Mrs. Schoolcraft, taken from the Smithsonian Schoolcraft Papers, are published in Michigan Pioneer and Historical Collections.[2] Under date of August 19, he says:

"The following day found me on my way to Fond du Lac with the five canoes, three men in each; * * * Some time after dark we encamped at the outlet of St. Louis river.

"We were under way at an early hour; and the first portion of the river, expands into a beautiful large sheet of water, at the end of which, on rather a high point of land, can be seen the remains of an old fort, built formerly by the traders of the North West Company.

"We proceeded slowly, as we had only now to assend

[1] Id., p. 326.

[2] Vol. 37, p. 132, et seq.

> the river twenty miles, when we would reach the portage, and would probably have to wait one or two days for the boats to come up. on turning an abrupt point of the river a fine view of the Fond du Lac ridge of hills was visible, at the foot of which, is a trading post." [1]

These letters, while not published prior to the passage of our Enabling Act, are, we submit, the best evidence of contemporary oral usage. And after all, the language of the diplomat, the administrator, and the legislator finds its roots in the common daily speech of the people themselves.

So far, we find that the primary occasion for visiting the area in question arose in connection with the fur trade and the affairs of the government's wards, the Indians. Forces were at work, however, that were soon to alter and disturb the habitat of the Indian, and which resulted in most signal and decisive legislative and departmental illustration of official understanding of the term, "mouth of the St. Louis River."

4. *The movement for the acquisition of the copper lands from the Indians resulting in the treaty of 1842 and its decisive location of "the Mouth of the St. Louis River."*

For half a century, Indian, fur trader and diplomat, traveller and statesman, had reflected public interest and illustrated general usage. But all the while, smouldering, as it were, in the background of public consciousness, was an interest in another aspect of the shores of Lake Superior, which was soon to leap into flame. Prelude and prophesy of the fever for gold that scorched its trail across the continent was the flurry, milder yet still intense, that arose as to the copper mines of Lake Superior, and which occasioned usage so decisive and definite that it shortens, if it does not end, the labors of this court.

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[1] Id., pp. 154–155.

a. Interest in the copper lands from 1800 to 1842.

On the third day of March, 1800, William Cooper, father of James Fennimore Cooper, the novelist, presented to Congress a resolution embodying the proposition "to purchase of the Indians that tract of land on the south side of Lake Superior which shall include the great copper bed." His argument that a navy required "very liberal use of copper," obtainable then at not "less than half a dollar a pound," but which might "be had at a very low price" by attention to the objects within their power, and his wish "that this invaluable copper mine" be made "of public utility as it must become if purchased,"[1] fixes his status as one of the pioneer conservationists of America. But it did more than this. It set in motion a train of resolutions,[2] investigations, and reports[3] that revived, stimulated, and kept alive an interest in this region, where the presence of copper had been noted by Allouez as early as 1667.[4]

Schoolcraft, pursuant to instructions, had reported in 1820, under date of November 6:

> "Every fact which has been observed tends to strengthen the belief that there are extensive copper mines upon its shores."[5]

And in 1823, Benton, ever indefatigable and well informed,—

> "reported a bill to enable the President of the United States to treat with the Chippewa Indians for the purchase of certain lands on the south side of Lake Superior, supposed to contain valuable mines of copper."[6]

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[1] Annals of Sixth Congress, pp. 583, 588, 629, 650.
[2] Annals of Seventh Congress, 1st Sess., pp. 1018, 1074.
[3] Senate Papers, 2nd Sess., 17th Cong., Document No. 5.
[4] Allouez's Journey to Lake Superior, in *Early Narratives of the Northwest*, published by Scribners, 1917, p. 105.
[5] Senate Papers, 2nd Sess. 17th Cong., Document No. 5, p. 25.
[6] Annals of 17th Congress, 2nd Session, p. 146.

The Commissioner of the General Land Office in 1823 stated:

> "We have accounts of the existence of large masses of native copper, on the head waters of the Mississippi, and along the shores of Lake Superior." [1]

Under date of November 21, 1824, Governor Cass emphasized the ease and advantage of purchasing the copper country.

> "The Indian population is very thinly scattered upon the southern shore of Lake Superior. Along the whole line of coast from the Sault St. Marie to the Fond du Lac, no article of food is raised by them; they depend for their support principally upon the fish, and partially upon the scanty supply of game which is furnished by that inhospitable country." [2]

1825 saw further discussion of the proposition, both in the Senate and the House. In the former, Benton detailed in lucid fashion the history of the region,[3] the House, however, on March 2, 1825, after much discussion,[4] rejected the proposition.

Governor Cass, whose interest in the matter continued unabated, introduced into the Treaty of Fond du Lac, negotiated by him and Col. McKenney, under circumstances already detailed, as Article 3, the right "to search for, and carry away, any metals or minerals from any part of their country." [5]

Houghton, who had turned aside from the prosaic business of vaccinating the savages to examine the prospects for copper on Lake Superior, reported to Cass, then Secretary of War, under date of November 14, 1831, that it was—

> "certain that a greater quantity of insulated native cop-

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[1] State Papers, 1st Sess., 18th Cong., Vol. VI, Doc. No. 128, p. 25.

[2] Doc. No. 440, 18th Congress, 2nd Session, American State Papers, Public Lands, Vol. IV, pp. 65, 66.

[3] Congressional Debates, Vol. I, p. 684.

[4] Id., pp. 736–737.

[5] U. S. Stat. L., Vol. 7, Indian Treaties, p. 291.

per has been discovered upon the borders of Lake Superior, than in any other equal portion of North America."[1]

Schoolcraft, in 1838, again voiced the opinion officially:

"From what is actually known, it may be regarded as destined to be considered, hereafter, as one of the principal mining districts in North America. The indications of copper, iron, lead, and even of the precious metals, are decidedly favorable."[2]

And he detailed the low ebb of the fortunes of the Indians in the vicinity of Fond du Lac at the close of the War of 1812, the temporary flare of old time activities in the fur trade under the stimulus of cupidity and alcohol, and its flickering out, leaving them deteriorated in their tone and independence of mind, and sadly in debt, with the result that—

"their emigration has therefore naturally forced itself upon the attention of the public, as the only practicable mode of rescuing them, and preserving them as a distinct race."[3]

b. The treaty of 1842 which fixed the "Mouth of the St. Louis River."

Such was the history of the public mind and the state of the Indian tribes, when chapter 33, Laws of 1841, was adopted, appropriating five thousand dollars for the expenses of holding treaties with the Indian tribes, for the extinguishment of their lands within the limits of the state of Michigan.[4] Pursuant to the terms of this act, the President appointed Robert Stuart to treat with the Indians, and under date of October 4,

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[1] *Discovery of the Source of the Mississippi*, Appendix, No. 5, p. 288.

[2] Annual Report, Commissioner of Indian Affairs for 1838, p. 483.

[3] Id., p. 486.

[4] U. S. Stat. L., Vol. 5, p. 417, 419.

1842, he concluded the Treaty of La Pointe with the Chippewa Indians of the Mississippi and Lake Superior. Article I of that treaty follows:

> "The Chippewa Indians of the Mississippi and Lake Superior, cede to the United States all the country within the following bounderies; viz: beginning at the mouth of Chocolate river of Lake Superior; thence northwardly across said lake to intersect the boundery line between the United States and the Province of Canada; thence up said Lake Superior, to the mouth of the St. Louis, or Fond du Lac river (including all the islands in said lake); thence up said river to the American Fur Company's trading post, at the southwardly bend thereof, about 22 miles from its mouth; thence south to intersect the line of the treaty of 29th July 1837, with the Chippewas of the Mississippi; thence along said line to its southeastwardly extremity, near the Plover portage on the Wisconsin river; thence northeastwardly, along the boundery line, between the Chippewas and Menomonees, to its eastern termination, (established by the treaty held with the Chippewas, Menomonees, and Winnebagoes, at Butte des Morts, August 11th, 1827) on the Skonawby river of Green Bay; thence northwardly to the source of Chocolate river; thence down said river to its mouth, the place of beginning; it being the intention of the parties to this treaty, to include in this cession, all the Chippewa lands eastwardly of the aforesaid line running from the American Fur Company's trading post on the Fond du Lac river to the intersection of the line of the treaty made with the Chippewas of the Mississippi July 29th 1837."[1]

The framers of this treaty left no doubt as to their understanding of what they meant by the "mouth of the St. Louis River," which they placed at a distance of 22 miles from the Indian village. They had the same understanding as Thompson had when he fixed 21 miles of current; as Doty had when he placed the Northwest Company's establishment 21 miles from the mouth of the river; as Cass had, whose approximation made

[1] U. S. Stat. L. Vol. 7, Indian Treaties, p. 591.

it 25 miles from the mouth of the river; as Nicollet had, who placed it at 24; as Schoolcraft, who placed it at 18 miles from the Indian village, which in turn was three miles above the mouth of the river.

Article VII of the treaty provided that "this treaty shall be obligatory upon the contracting parties, when ratified by the President and Senate of the United States."

Incidental reference was made to the treaty and its importance emphasized in a document transmitted to Congress in connection with the second annual message of President Tyler, on December 6, 1842, it being stated:

> "I have also learned, unofficially, from the commissioner authorized to treat with the Chippewas, in the northwest of Michigan, under the act of Congress of 3d March, 1841, appropriating a sum of money to defray the expenses of the negotiation, that he has succeeded in obtaining a cession of their land in Michigan, and west of it, as far as Fond du Lac, and for twenty miles up the Fond du Lac or St. Louis River. This acquisition covers a valuable mineral region in Michigan, and perhaps west of it—embraces the islands, and gives us the control of the southern shore of Lake Superior. I am not at liberty to speak further of its provisions now, and allude to its conclusion in this general way, because it is a fact in the administration of the Indian department, and a very important one."[1]

The treaty itself was transmitted by special message of the President on December 14, 1842[2], just four months following the transmission of the Webster-Ashburton Treaty, whose consummation involved the rejection of the St. Louis River as a portion of the boundary line. So that the attention of Congress was doubly directed to the St. Louis River at this session, once in connection with the Webster-Ashburton Treaty,

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[1] Annual Report, Commissioner of Indian Affairs for the year 1842, Doc. No. 2, p. 372.

[2] Vol. IV, Richardson's *Messages and Papers of the Presidents*, p. 210.

and the second time in connection with this treaty with the nation's wards. The Senate ratified the treaty on the 15th of February, 1843,[1] just thirteen days after Mr. Benton had detailed his views as to the St. Louis River, to such extent that it has required nineteen finely printed columns of the Appendix to the Congressional Globe[2] to set forth the same in fullest scope. The treaty was proclaimed by the President March 23, 1843.[3]

c. Dispute with the Indians as to construction of treaty.

But the area in question did not pass from the attention of Congress with the ratification of the treaty. The Annual Report of the Commissioner of Indian Affairs for 1843 refers to the area acquired as "especially valuable for its mineral treasures," refers to a singular pretension "set up by a small band of Chippewas," which is treated in detail:

> "The first article of the treaty of 4th October, 1842, contains the cession; and, in describing it, holds this language: 'Beginning at the mouth of Chocolate river of Lake Superior; thence northwardly across said lake to intersect the boundary line between the United States and the province of Canada; thence up said Lake Superior to the mouth of the St. Louis or Fond du Lac river, (including all the islands in said lake,') etc.
>
> "There are some things so clear that any attempt at making them more so is very apt to obscure them. This I take to be one of those cases. The treaty with the Ottowas and Chippewas, of 28th March, 1836, has for one of the boundaries of its cession the line between us and Canada, from the straits and river St. Mary's to a point in Lake Superior opposite the mouth of Chocolate river, to which the line runs south from said point. The treaty of 1842, it will be observed, bounds its cession from the mouth of Chocolate river

[1] Ann. Rep., Commissioner of Indian Affairs, 1843, p. 264.
[2] Appendix to Congressional Globe, Vol. XII, 3d Sess., 27th Cong., 1842–43, pp. 132–138.
[3] U. S. Stat. L., Vol. VII, p. 591.

north to said point—that is, a part of the west line of the treaty of 1836 is the east line of the cession of 1842—the latter running up 'Lake Superior to the mouth of the St. Louis or Fond du Lac river, (including all the islands in said lake.)' "[1]

The next year saw this controversy settled, and the original claim of the Indians for $60,000 disposed of in consideration of—

"the regard which the President of the United States bears to his red children of the Chippewa nation, four hundred dollars worth of gunpowder and one hundred dollars worth of fresh beef"[2]

d. Boundaries of mineral lands fixed to coincide with boundaries of Indian treaty.

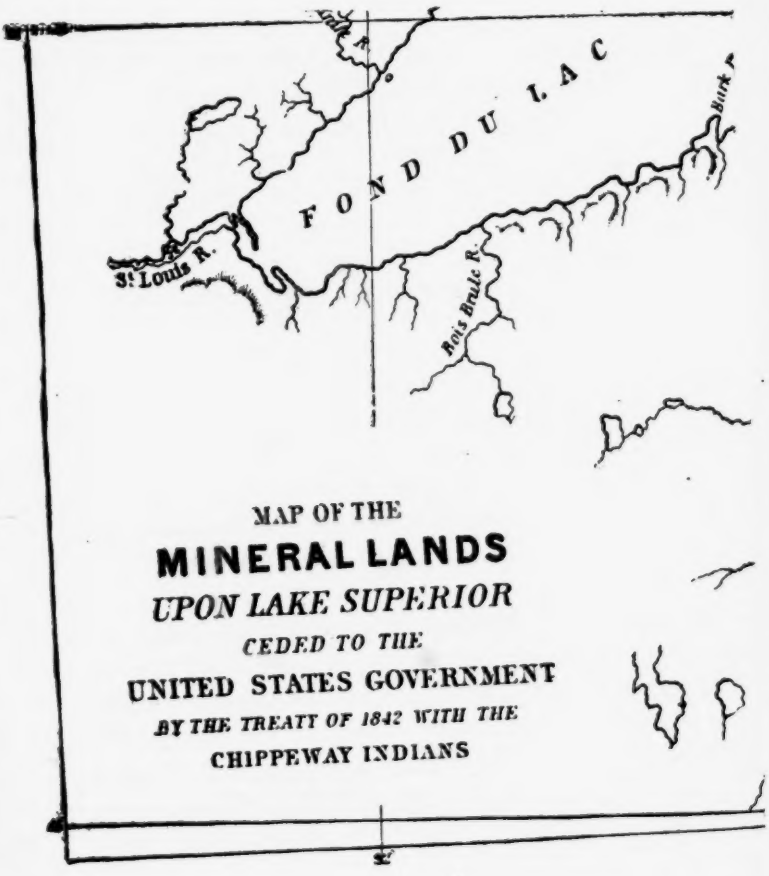
Further consideration of the area arose in connection with Article VI of the treaty, under the terms of which it became necessary to fix the boundary of the mineral district. Within a month after its proclamation, the Secretary of War issued instructions to a special agent on April 13, 1843, to ascertain what portions of the ceded territory "should be treated as mineral lands," and pursuant to these instructions the agent for the mineral lands reported under date of Jan. 8, 1845 that "the boundaries of the 'mineral district of Lake Superior' " should be so fixed so as to coincide at its western and northern boundary with the boundary fixed in the treaty of 1842.[3] At the same session, Document No. 117 was submitted, a report on the facilities of approach to the mineral region of Lake Superior.[4] At the special session following, pursuant to resolution under date of

[1] Ann. Rep., Commissioner of Indian Affairs, 1843, pp. 264, 282–283.

[2] Ann. Rep., Commissioner of Indian Affairs, 1844–45, p. 24.

[3] Sen. Documents, Vol. VII, 28th Cong., 2nd Sess., Doc. No. 98.

[4] Id., Doc. No. 117.


FOND DU LAC
St Louis R.
Rois Brule R.
MAP OF THE
MINERAL LANDS
UPON LAKE SUPERIOR
CEDED TO THE
UNITED STATES GOVERNMENT
BY THE TREATY OF 1842 WITH THE
CHIPPEWAY INDIANS

March 15, 1845, there was submitted a report of John Stockton, Superintendent of the Mineral Lands of Lake Superior, which was ordered printed. Accompanying this report is a map, the pertinent portion of which appears on p. 50 accurately mapping that portion of the northwestern boundary of the state of Wisconsin now in controversy, described in the Enabling Act of the following year. The text refers to—

> "The whole distance *along the coast*, from Chocolate river to Fond du Lac, which are the eastern and western limits to the agency * * * lying between the meridians of 87° 30′ and 92° 20′ west longitude."[1]

c. The high pitch of interest in the copper lands in 1846—the year of the Enabling Act.

By 1846, then, interest in this mineral district, whose boundaries coincided with those of the state about to be formed, had reached such a pitch that citizens of Chicago and Detroit, by memorial dated June 8 and June 25, 1846, and presented July 2, remonstrated against the withdrawal of the right of preemption, setting forth "that the region in question contains some of the richest copper mines in the world," and "that the enterprize has been the means of introducing several steam boats and vessels, and creating an active commerce on that remote but magnificent lake."[2]

Charles T. Jackson, United States geological surveyor of the mineral lands in Michigan, stated:

> "In 1846 speculations in mining stock became prevalent in most of our cities, and many companies were formed with

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[1] Senate Documents, Special Session, 1845, Doc. no. 175, pp. 20–21.

[2] Senate Documents, Vol. VIII, 1st Session, 29th Congress, No. 418, pp. 1–2.

the idea of mining on Lake Superior. * * * Stock gambling became the rage."[1]

And a final proof of interest and resulting information to the public generally and to Congress is found in the publication in that year of a little volume on the *Lake Superior Copper Mines*.[2] As a frontispiece, this work carries Bayfield's North America, Sheet IV, Lake Superior. The chart shows the designation, "R. St. Louis," ending squarely opposite the so-called "Entry," which has on it the statement, "8 ft. on the Bar," and "Fond du Lac" in the bay outside the two points.

In the course of his description, the author states:

"Bois Brule, or Burnt Wood river, enters Lake Superior thirty-five miles due east from the mouth of the St. Louis River, at Fon du Lac, (bottom of the lake)."[3]

And again on the page opposite:

"The lake shore from here bears S. W. to the entrance of the Bay of Fon du Lac, which has usually eight feet water on the bar, and is a good harbour on the south shore, to which a long narrow strip of land comes nearly across from the north shore, and around whose eastern point, between it and the main, is reached the greater bay, or end of the lake. At the bottom of this bay, which is some nine miles in circumference, is the mouth of the St. Louis River, whose branches interlock in the N. W. with those of the Upper Mississippi."[4]

And it is said:

"The treaty with the Chippewas, which was consummated in 1842, gave us the mineral lands of the south shore of Lake Superior."[5]

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[1] Executive Documents, 1st Session, 31st Congress, Vol. 3, Part 3, Doc. No. 5, p. 387.

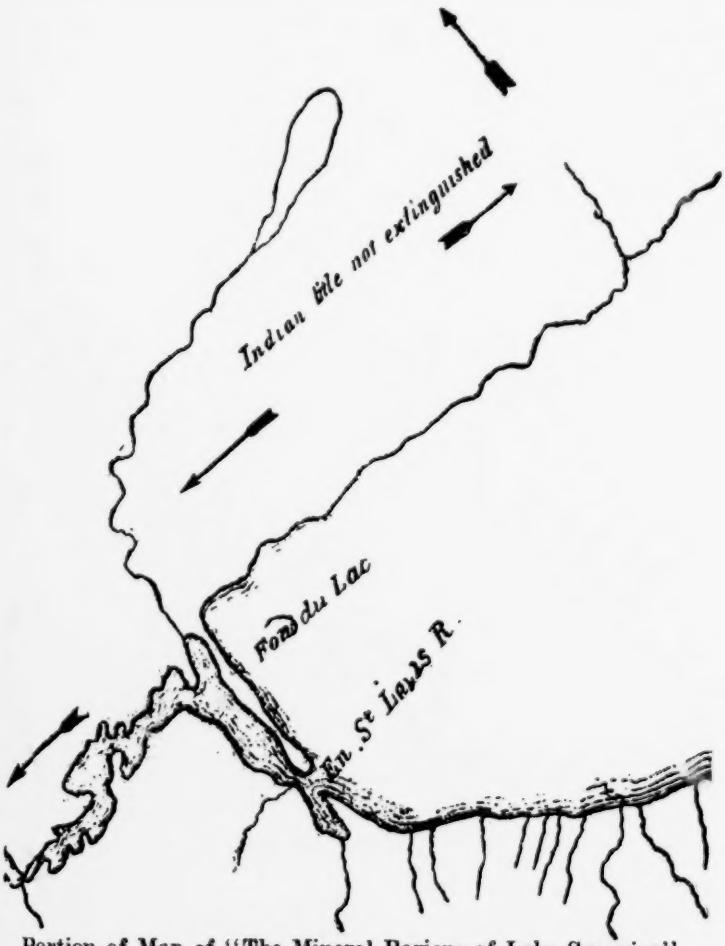
[2] *A True Description of the Lake Superior Country*, by John R. St. John.

[3] Id., p. 46.

[4] Id., p. 47.

[5] Id., p. 48.

Upon the author's map,[1] of which the pertinent portion is herewith reproduced, we find the "En. St. Lewis R." placed between the extremities of Wisconsin and Minnesota Points.



Portion of Map of "The Mineral Regions of Lake Superior" taken from volume *Lake Superior Copper Mines*, John R. St. John, opp. p. 50.

[1] Id., op. p. 50.

It may be noted that the description[1] is somewhat ambiguous and out of accord with other authorities. Apparently the author considers the water inside the two points to be the bay of Fond du Lac, and there is a possibility that under this construction, the mouth of the St. Louis river is located between Rice's Point and Connor's Point, which while not material to the controversy here, is an illustration of variation in usage.

Definite proof that the phrasing of the Enabling Act came directly from the Indian treaty approved and published some three years earlier, in the sense that it was formally stated on the floor of either house or in the report of any committee that the language of one act was taken bodily from the other, is wanting. The inference, however, that the Indian treaty inspired the calls of the boundary line is scarcely to be avoided. They are too closely identical to permit the belief that their coincidence is the product purely, of unrelated accident. Interest in the mineral possibilities of this area continued for years to come. Seven years later we find the surveyor who ran the boundary line reporting as to the very portion of the area now in dispute: "From the best information obtainable, I am inclined to believe that this is as good a mineral range as is to be found on Lake Superior."[2] Reading the language of the Enabling Act in the light of the information then current, with the dominating factor that guided men's attention to this section of the country, the mining of copper, the copper district having been specifically based upon the boundaries of the Indian treaty and this Enabling Act adopted at the height of interest in the region, and employing the

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[1] Id., p. 47.

[2] R. p. 444; Senate Documents, 1st Sess., 33d Cong., Vol. 1, 1853–54, Senate Doc. 1, p. 224.

same terms as used in the previous descriptions, leads irresistibly to the conclusion that they were employed in the same sense and that the mouth of the St. Louis river in the Enabling Act was at the same point as the mouth of the St. Louis river in the Indian treaty, and that both were located at the "Entry," some twenty-two miles from the Indian village.

5. *Boundary controversy with Michigan and use of term "Fond du Lac" and "River St. Louis."*

There was a similar boundary controversy that resulted in the presentation of maps to Congress during this period. The boundary between the state of Michigan and the Territory of Wisconsin was directed to be surveyed by the act of June 12, 1838. Pursuant thereto, a survey was made by Thomas J. Cram, and a report under date of December, 1840. No. 1 of the maps presented is denominated as "From a map of the entire territories of Wiskonsan and Iowa, published by order of the Legislative Assembly of Wiskonsan, 1838,"[1] and shows in accurate detail the region on which the Northwest boundary of the state was to be laid. The name "St. Louis River," does not appear upon the map, but the designation "Fond du Lac Bay," appears outside Wisconsin and Minnesota Points in Lake Superior.

A second report by Captain Cram was made under date of February 10, 1842.[2] The accompanying map is marked No. 6. This map contains the designation "Fond du Lac," at the entrance of the bay, and the words, "River St. Louis," terminating immediately opposite the entry. A table of approximate

[1] Senate Doc., 2nd Sess., 26th Cong., Vol. IV, 1840–41, Doc. No. 151, op. p. 16.

[2] Senate Doc., 2nd Sess., 27th Cong., Vol. III, 1841–42, Doc. No. 170.

latitudes and longitudes, used in construction of the map, is given, which designates:

"Fond du Lac (Lake Superior)—

Latitude north	46° 39′ 50″
Longitude west of Greenwich	92 11 2
By whom determined	J. N. Nicollet" [1]

6. *The Nicollet map, upon which boundary was located.*

The authority thus cited for the designation of this point of latitude and longitude is one whose labors had even greater interest and significance in connection with the present inquiry.

Instead of the so-called Bayfield map, therefore, introduced in evidence by the state of Minnesota, being the exclusive map of which Congress might have had knowledge, we find that the maps in existence and of which Congress had presumptive knowledge, and as we have seen in many cases, undoubted official and actual knowledge, included maps by David Thompson, by Schoolcraft, by Lieut. Allen, by T. J. Cram, and a map of the entire territory of Michigan and Wisconsin published by the Territorial Assembly of Wisconsin and reproduced in the report of Captain Cram; but when Congress came to lay down the boundary upon some actual map, all of these were passed by, and a map selected that had been prepared by a most interesting and unusual character. Two centuries after the name of Nicollet had been made illustrious in the region of the great West, there appeared in the wilderness of the upper Mississippi in 1836 a French scholar and scientist whose name, Jean N. Nicollet, was identical with that of his famous predecessor, and who had conceived the ambitious project of a "full exploration of the Mississippi river from its mouth to its very sources," preliminary to the publication of the "Physical History of the Valley of the Mississippi." [2] His

[1] Id. p. 7.

[2] Doc. No. 52, 28th Congress, 2nd Sess., House of Representatives, pp. 3–4.

surveys and observations appear to have occupied the years 1836 to 1839. In 1838, he was authorized by the War Department to collect additional materials.

As stated by one authority, the map which he constructed and the astronomical observations which he made were invaluable to the country.[1] As early as 1843, a resolution had been introduced in Congress for the publication of his map.[2] He died on the 18th of September, 1844, probably as a result of the hardship and exposure incident to his explorations.[3] He undertook a detailed report to accompany his map, and while his death left the introduction half written, Congress, under date of January 11, 1845, passed a resolution for the printing of 1500 copies of the report for the use of the House. The report indicates that he was thoroughly familiar with the proceedings of the Boundary Commission, relying on information obtained from Mr. Ferguson, the astronomer of the Commission;[4] that he knew of the work of Captain Cram;[5] of the British Admiralty survey by Lieutenant Bayfield;[6] of the explorations of Cass, Schoolcraft, Allen, and Beltrami.[7] He assumed correctly, we submit, that Congress was familiar with the work that they had done. Indeed, the detail of his report is shortened by reason thereof, and we assume that the attention of Congress, for descriptions of the mouth of the St. Louis River, as well as other regions, was directed to the descriptions of Schoolcraft and Allen for full detail, for it is stated:

"From Kabikons, the country which follows, as far as Sandy Lake, as well as that which precedes it, having been

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[1] Neil, History of Minnesota, 4th ed., p. 420.
[2] Cong. Globe, Vol. XII, p. 379.
[3] Neil, pp. 420–421.
[4] Ex. Doc., 28th Cong., 2nd Sess., Doc. No. 52, p. 119.
[5] Id. p. 128.
[6] Id. p. 128.
[7] Id. p. 59.

fully described by Messrs. Schoolcraft and Allen, I have nothing to add."[1]

While our attention is thus directed to the work of Schoolcraft and Allen for details concerning the mouth of the river, his passion for accuracy led him to record in the table of geographical positions, this significant and decisive sentence as to his understanding of the location of the mouth of the river:

> "St. Louis river, the trading-house called *Fond du Lac*, but about 24 miles up the stream from the true *Fond du Lac*."[2]

This sentence has been introduced in evidence.[3]

The map, say counsel for Minnesota, does not locate the mouth of the river. A mere glance at the map, however, must suggest to the court that this is a situation to which the language employed in discussing a previous controversy as to the boundaries of this region might very well be applied. "There are some things so clear that any attempt at making them more so is very apt to obscure them."[4] There is absolutely nothing in an examination of the map to raise a suspicion or suggestion of a possibility that the mouth of the St. Louis River might be located other than where Wisconsin contends it is located, and where travelers, explorers, and scientists universally—and Nicollet himself,—agreed that it was located, and that is at the so-called "Entry." If it were to be located at any other place, we submit, the only alternative would be to place it miles inland, where the St. Louis River combines with East Savannah, the Embarrass, and the East Swan, which of course would put it entirely outside the district under scrutiny, for the map shows the river St. Louis beginning with its juncture with these

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[1] Id. p. 63.
[2] Ex. Doc., 28th Cong., 2nd Sess., Doc. No. 52, p. 128.
[3] R. p. 1070.
[4] Annual Report, Comm. of Indian Affairs for 1843, p. 282.

streams as being of substantially uniform width clear to the "Entry." There is no intermediate stopping place possible, if the Nicollet map itself were the sole medium for fixing the mouth of the St. Louis River. The designation, "St. Louis river" upon the map itself terminates opposite Rice's and Connor's Points, and eliminates the possibility that the vicinity of Big Island might answer the call of the description. Outside of Wisconsin and Minnesota Points we find the designation, "Wekwa Kitchi Gummi (Big Lake)," meaning the bay of the Big Lake, or "Fond du Lac Superior."[1] The map thus doubly emphasizes that the head of the lake, consequently the mouth of the river, is located where Wisconsin contends.

7. *Usage and practical construction by Congress, the President, executive departments, the legislatures of both states, federal courts and the courts of both states, confirm the sense in which the terms "Mouth of St. Louis River" and "St. Louis River" were used in the Enabling Act of 1846.*

The Enabling Act was passed, then, with "no hinge or loop to hang a doubt on," as to the meaning of Congress in the use of the phrase, "mouth of the St. Louis River." The court, however, gives great weight to contemporary or practical construction as to the meaning of a term, especially if long continued. And it might conclude that this unambiguous phrase, if statutory, departmental, judicial, and popular usage uniformly assigned to it a different meaning, had lost its early and primary significance, and that it must construe the term as Minnesota contends, because of the uniform and universal subsequent understanding and use of the phrase. We are brought to consider therefore, how far has

[1] *The Indian in His Wigwam*, by H. R. Schoolcraft, p. 303; see also Schoolcraft's *Discovery of the Source of the Mississippi*, Appendix, p. 207.

such usage, subsequent to the adoption of the Enabling Act, altered, varied, affected, or confirmed the well understood, pre-existing usage and meaning? We shall find that the economic factors which had stimulated interest in this region and accelerated descriptive usage were not to decline, but rather to increase in importance as the shores on either side strove for and reached their long predicted industrial and commercial pre-eminence.

a. Geological surveys.

The geological reconnoissance of the mineral lands in this region, which had "attracted the attention of capitalists in this country and in Europe,"[1] was still uncompleted until just a month preceding the formal act for the admission of Wisconsin into the Union.

(a) David Dale Owen.

The report of David Dale Owen, of New Harmony, Indiana, son of the famous social theorist who founded that community, was characterized by Secretary Ewing in his first report as Secretary of the Interior as "not only a valuable contribution to science, but • • • also the best information which we have of the agricultural capabilities and the mineral wealth of the extensive district of country which he has explored."[2]

This report was originally made to the Commissioner of the General Land Office prior to the creation of the Department of the Interior, and by him transmitted to the Secretary of the Treasury, who in turn communicated it to the Senate, by

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[1] Report to Thomas Ewing by the Commissioner of the General Land Office, Executive Documents, 1st Sess., 31st Cong., Vol. 3, Part 2, Doc. No. 5, p. 21.

[2] Report of Thomas Ewing, Secretary of the Interior, Ex. Doc., 1st Sess., 31st Cong., Vol. 3, Part 2, Doc. No. 5, p. 8.

whom it was ordered printed on July 3, 1848. At page 6, it is stated that a geological section had been constructed "from **Lake Superior to the falls of St. Louis river.**"[1] The active work of making the survey was apparently entrusted to Dr. Norwood, whose instructions were:

> "After completing his observations on Madeline island, he was instructed to coast along the lake to Fond du Lac, and after instituting some observations at the mouth of the St. Louis river, he was to endeavor to reach the St. Croix."[2]

These instructions were followed by Mr. Norwood, as appears from his separate report under the same date:

> "Through the kindness of Mr. Rice of the Missouri Fur Company, I took passage in his boat for Fond du Lac, or, rather, for the trading post of the American Fur Company on the St. Louis river."[3]

Detailing their progress, he says:

> "Nine miles east of the 'Entry,' or mouth of the St. Louis river, Spawn river enters the lake."

And, continuing:

> "The lake shore, for the entire distance between the mouth of the Bois Brule and the 'Entry,' is a clay bank, varying in height from six to forty feet, and without any exposure of the red sandstone.
>
> "The mouth of St. Louis river is narrow, with a sufficient depth of water, however, to admit boats of large size to pass the bar at all times. It lies between two narrow strips of land which run from the highlands on either side to the 'Entry,' and divide the waters of the lake from a small bay formed by the widening of the river. On the northern tongue of land, the Missouri Fur Company has a trading post."[4]

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[1] Ex. Doc. No. 57, Senate Documents, 30th Cong., 1st Sess.
[2] Id., p. 54.
[3] Id., p. 75.
[4] Id., 76.

Then again:

> "From the 'Entry' to the fur company's post, a distance of eighteen miles, St. Louis river is wide and of sufficient depth to admit the passage of the small craft which ply upon Lake Superior. It runs through a rich alluvial bottom from one to three miles in width, which is partly timbered and partly covered with natural meadows. It is somewhat crooked, with reaches from a quarter of a mile to a mile in length.
>
> "The trading house of the American Fur Company is situated on the north shore of the river, and immediately opposite is the corner, not only of the Chippewa land district, but also of the proposed State of Wisconsin. It is also the corner of the boundary lines, running south and east, between the lands ceded to the general government by the Chippewas, in 1842, and those still held by that tribe east of the Mississippi."[1]

And, in describing the various geological sections, we find one designated:

> "Section No. 2. From the Mississippi, at St. Paul's, to the trading house on St. Louis river, 18 miles above Fond du Lac."[2]

Among mineral locations in the Chippewa land district in Wisconsin, he states:

> "There are, also, two or three on the Nemadji or Left Hand river, south of Fond du Lac, and several at the falls of the St. Croix.
>
> "Mr. R. Chapman has a settler's claim to a location about twent ymiles north of Fond du Lac."[3]

The final report of Dr. Owen of his observations and discoveries, embodying his reports of 1848 and 1849, was made

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[1] Id., p. 77.

[2] Id., p. 120.

[3] Ex. Doc. No. 57, Senate Documents, 30th Cong., 1st Sess., p. 134.

under date of October 30, 1851,[1] and published under resolutions of the two houses of Congress.[2] Among other additions to the report already quoted, it is stated:

> "After passing the high hills south of the Great Bend of St. Louis River, and which approach it very nearly opposite the Trading-House, eighteen miles above its mouth, the country is undulating but not knobby."[3]

From a footnote, we learn:

> "In 1850, the propeller Manhattan, Captain Caldwell, entered this river without difficulty, and proceeded as far up as Fond du Lac Village. The river at the time was not above its ordinary stage, and at the lowest part sounded there was over six feet water in the channel. This brings the steam navigation on Lake Superior within thirty-five miles of the Mississippi at the mouth of Sandy Lake River."[4]

The statement already quoted from page 77, of the earlier report is amplified and this addition made:

> "Although the numerous islands and bars tend to complicate the navigation somewhat, for larger vessels, yet the rushes which spring up at every spot where the water is sufficiently shallow, form obvious marks for the guidance of a pilot unacquainted with the channel."[5]

And finally, describing a journey from Sandy Lake to Fond du Lac, it is stated:

> "On the morning of the 26th, we reached St. Louis River, and hastened to Fond du Lac, at which place we ar-

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[1] *Report of a Geological Survey of Wisconsin, Iowa, and Minnesota*, by David Dale Owen, published, Philadelphia, by Lippincott, Grambo & Co., 1852.

[2] House Doc. No. 1, 32d Cong., 2nd Sess., Report of the Commissioner of the General Land Office, p. 62.

[3] *Report of a Geolgical Survey of Wisconsin, Iowa and Minnesota*, by David Dale Owen, published, Philadelphia, by Lippincott, Grambo & Co., 1852, p. 216.

[4] Id., p. 270.

[5] Id., p. 271.

> rived on the 28th. * * * On the 30th of June, I started, with two voyageurs, and descended the St. Louis to Fond du Lac Superieure."[1]

(It should be borne in mind that this last sentence describes the journey from Fond du Lac, Minnesota, to the "Entry.") Describing the Ne-muj-i-ti-gue-ag, or Left-hand River (the Nemadji), it is said:

> "The water is of a reddish-yellow colour, and after heavy rains discolours the waters of St. Louis River, above its mouth, and the waters of the Lake, for some distance beyond the 'Entry,' as the mouth of St. Louis River is called."[2]

(b) Foster and Whitney.

Copper was not the only mineral to draw attention to the Lake Superior Region. Messrs. Foster and Whitney followed their report on the copper lands,[3] made in 1850, with a second report on the Iron Region and while it relates to a different geological district, reference is made to the fact that—

> "The most remarkable of all the belts of Lake Superior is that at the mouth of the St. Louis river, the extent of which may be seen by inspecting Bayfield's chart."[4]

In the rear of the volume is published a map which it is stated is based on the soundings of Captain Bayfield's chart, and that the geographical portion of the map is compiled from Bayfield's Chart. The St. Louis River is indicated on the map, the name extending to Connor's Point, and the bay is designated

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[1] Id., p. 301.

[2] Id., p. 302.

[3] Foster and Whitney, *Geology and Topography of a Portion of Lake Superior Land District*, Ex. Doc., 1st Sess., 31st Cong., Vol. 9, No. 69.

[4] Ex. Doc. No. 4, Vol. 3, Senate Special Session, 32d Cong., March, 1851, p. 261.

[5] Id., p. 261.

as Fond du Lac outside of Wisconsin and Minnesota Points. Various soundings are indicated in the St. Louis River.

b. Township and boundary surveys.

Even before the surveys of the natural resources had been completed, officials of the Land Office had called attention to the necessity of a survey of the lands in the more technical sense. The necessity of surveying the boundary between Wisconsin and Minnesota, preliminary to the completion of the township and subdivisional surveys, was pointed out by the Surveyor General of Iowa and Wisconsin in his report of October 18, 1849,[1] and an estimate made of the expense of "running and marking the meridian boundary line between Wisconsin and Minnesota."[2] The general appropriation bill of September 30, 1850 made provision for the survey, in the language and for the amount of the recommendation.[3] This appropriation was made too late to be available in the season of 1850, and the difficulties and embarrassment of the situation were again pointed out in the report of the surveyor general dated November 11th of that year.[4] Instructions given on July 27, 1851 to contract for the survey were, as appears from the report of October 24, 1851, received too late to carry them into effect. But the importance of the work and the proper conditions for its undertaking were outlined.[5] The recommendations of the Surveyor General appear to have been accepted, and instructions issued May 10, 1852, to contract for the survey of "the district bordering the southwest shore" of

[1] Executive Document No. 5, Vol. 3, Part 2, 1849–1850, p. 238.
[2] Id., p. 247.
[3] Ch. 90, 31st Congress, 1st Session, Vol. 9, U. S. Stat. L., p. 535.
[4] Senate Documents, 2nd Session, 31st Congress, Vol. 2, p. 49.
[5] Executive Documents, 1st Session, 32d Congress, Doc. No. 2, Report of Surveyor General, Iowa Land Dist., p. 73.

Lake Superior.[1] In the same report, it is said as to the "Boundary Between Wisconsin and Minnesota";

> "The survey of this boundary was confided to the charge of Mr. G. R. Stuntz, in connexion with his survey on the lake. Full instructions were issued to him, and his field-notes will, no doubt, be returned by the first proximo, as I have information that he is now engaged in prosecuting the work with his usual energy and skill."[2]

The qualifications of Mr. Stuntz for doing this work so highly commended were emphasized again in the report of the following year, where it was said:

> "As mentioned in the last report of this office, the surveys bordering the lake were intrusted to two skilful and competent deputies, under whose charge the work, so far as authorized, has been completed in a highly satisfactory manner."[3]

There is other evidence that Mr. Stuntz was a man of more than ordinary qualifications. That he seems to have had some interest in the scientific phases of his observations, would appear from the fact that as early as March 12, 1854, he had prepared a paper *On Some Recent Geological Changes in North-Eastern Wisconsin*. From this we learn that—

> "In the summer of 1852, I arrived on this part of the lake, with a party of twelve men, for the purpose of extending the Surveys of the United States bordering upon the south-west coast: and, also, of running the boundary line between the State of Wisconsin and the territory of Minnesota."[4]

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[1] House Doc. 1, Vol. 1, Executive Documents, 2nd Session, 32d Congress, p. 122.

[2] Id., p. 123.

[3] Vol. 1, Senate Documents, 1st Session, 33d Congress, Doc. No. 1, p. 223.

[4] American Association for the Advancement of Science, Proceedings, Vol. 18, 1869, p. 205. (Portions of this article have been introduced in evidence. See testimony of Mr. Lawrence Martin, Record p. 376.)

He adds:

> "I would here state that since my arrival at the mouth of the St. Louis River, in July 1852, the water of the lake had fallen, and was on the first of November, 1853, twenty inches lower."

Nearly twenty years later, he was characterized by General G. K. Warren as a "civil engineer, of much experience in the region."[1] And in the same volume Stuntz himself speaks of being engaged in "public surveys in the vicinity of Superior and Duluth for about fifteen years."[2]

In the Senate Documents of the year following, we find that his qualifications were such that—

> "during the years 1859, 1860, and 1861, he had charge of the meteorological instruments at Superior City, under the direction of Captain George G. Meade."[3]

It appears that he completed the survey of the boundary on the 11th day of December, 1852. We are also told:

> "The deputy who was intrusted with this survey was specially instructed to traverse, carefully, the St. Louis river, from his most westerly range line to the point designated by the acts of 6th of August, 1846, and May 29, 1848, as the starting point of said boundary. This was necessary in order that a connexion with the government surveys should be shown, at one point at least."[4]

From the same volume, the following pertinent and decisive language was formally introduced in evidence:

> "It may not be out of place, at this time, to give a brief description of the country through which this boundary line passes, especially as the increased attention which it is at

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[1] Report of Secretary of War, 3d Session, 41st Congress, Vol. 2, 1870–1871, p. 268.

[2] Id., p. 269.

[3] Senate Documents, 2nd Session, 42d Congress, 1871–1872, Doc. No. 76, p. 38.

[4] Senate Documents, 1st Session, 33d Congress, Vol. 1, Sen. Doc. No. 1, 1853–1854, p. 224.

present receiving is, in a great measure, attributable to your last able report, it being very generally referred to in communications received at this office, requesting more particular information in regard to the character of the district which was then only partly surveyed.

"That portion of the boundary defined by the St. Louis river, from its mouth (which is in township 49 of range 13) to the first rapids above the 'Indian village,' being peculiar, I will first describe: 'The mouth of the river is about one-fourth of a mile wide, and is formed by a narrow sand-bar projecting from the north shore of the lake, about seven miles. This bar is uniform in course, and varies from ten to forty chains in width. The bar on the east side of the river is like that on the west, but is only one and a half mile in length. During the past summer the water in the channel over, or through the bar, was about seven feet deep; but the entrance is crooked, and difficult of access during the heavy northeast storms which at certain seasons prevail. Once inside, however, vessels are safe, as the river widens into a bay about eight miles long, and one and a fourth mile wide. The shores are mostly clay-banks, with narrow sand-beach for about six miles, when the beach disappears, and small bays, or inlets, extend from the main body to distances varying from five chains to two miles. At the distance of nineteen miles up the river is situated the Indian village of Fond du Lac, on the north side of the river, containing fifty or sixty cabins and lodges, three or four good houses, two trading posts, and a mission building. On the Wisconsin side, opposite this village, several families of French and Indians live in a half-civilized manner."[1]

Presumably this description was written by Mr. Stuntz. The map which accompanied this report may be examined in the files of the General Land Office in Washington, and corroborates the description, in that the entire area is mapped from the Entry to the Indian village. The description itself leaves neither possibility nor excuse for mistaking the precise location of the mouth of the river, as the same is designated as being in Town-

[1] Id., p. 224; Record p. 444.

ship 49, Range 13. An examination of any of the maps of this area is sufficient to disclose that to locate the mouth of the river at the point suggested by Minnesota would place it just at the boundary between Ranges 14 and 15, Township 49.

We are indebted to the record for the introduction of Mr. Stuntz's general map of the area outside the Entry. (See Wisconsin Exhibit 13), while Exhibit 15 is a map in greater detail showing Wisconsin Point and Minnesota Point and the Entry.[1] A reproduction of this exhibit appears on the following page, and the same was supplemented at the time of taking testimony by the introduction of the original notes relating to section 28, which examination of the exhibit discloses is the extremity of Wisconsin Point. These notes designate a "Meander post at mouth of St. Louis River, sand beach," with the date, May 28, 1853. We find further: "Meanders of bay beginning at mouth of St. Louis River."[2]

The witness by whom these field notes were introduced, Assistant Chief Clerk of the Land Office of the State of Wisconsin,[3] testified without objection that section 28 was the end of Wisconsin Point, surveyed by George R. Stuntz, and that the excerpts introduced were from his original field notes, on file as part of the records in the office of the Commissioners of Public Lands of the State of Wisconsin.[4]

Wisconsin Exhibit 7,[5] was the plat of Township 49 Range 14, which is the next township west, and while the designation, "Bay of St. Louis," is written across the face of the waters all the way from Big Island to Minnesota Point, the technical meander lines are described as "Meanders of Island, St. Louis River, Sloughs and Bays." As appears from the face of the exhibit, the town-

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[1] Record page 438.
[2] Record page 435, fol. 651.
[3] Record page 432.
[4] Record page 436.
[5] Record page 433.



Map of Mouth of St. Louis River, by George R. Stuntz, being a Reproduction from a Plat Approved by the Surveyor General, introduced in evidence as Wisconsin's Exhibit 15.

ship lines were surveyed in June 1853 and May 1854, and the subdivision lines in May, 1854.

It likewise appears therefrom that a partial plat of the city or village of Superior must have been projected prior to the date of the completion of the survey, which was examined and approved under date of July 7, 1854, by Warner Lewis, Surveyor General. Doubtless it was his examination of this map that prompted the statement in his annual report succeeding the receipt of the township plat—

> "that a flourishing village has been laid out at the mouth of the St. Louis river, and several valuable mills have been erected within the last few months."[1]

Exhibit 8[2] is a copy of the township, including Big Island, and as appears therefrom, the St. Louis River is indicated by arrows northerly of Big Island.

As the exhibit shows, the subdivisions of Big Island were not completed and approved until 1865. The same year a survey of a projection on the right bank of the Nemadji, or Left-hand river, which had been omitted from the previous survey or had possibly emerged from the waters in the interim, was made, as appears from the face of Exhibit 14,[3] and the waters between the mouth of the Left-hand river and Minnesota Point were then designated as St. Louis River, or Bay of Superior.

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[1] Senate Documents, 2nd Session, 33d Congress, Vol. 1, 1854–1855, Executive Document No. 1, Report of Warner Lewis, Surveyor General, p. 194.

[2] Record page 433.

[3] Record page 438.

c. Legislative memorials and Congressional and departmental usage in connection with the establishment of post roads and the construction of military road to "Mouth of St. Louis River."

With increased attention to the natural resources of the region at the head of the lakes, and the consequent pressure of the more hardy and adventurous elements of the population toward that quarter, we should expect that the problem of transportation of supplies to and of products from this area would become of increased importance, and that the discussion of the means of communication would involve reference to a description of their natural terminus. As early as 1846, Mr. Gray, assistant superintendent and surveyor of the mineral region, had urged that—

> "The rapid progress and comparatively immense immigration to Lake Superior requires immediate attention of the government for the advancement, in its power, of facilitating and protecting the lives and the property of the people. Communications should be opened by roads and trails, where other advantages do not exist. Light-houses should be erected to guide the numerous vessels that are now floating there, and other improvements for their safety are required."[1]

In the year following the admission of Wisconsin to the union, Minnesota was created a territory, March 3, 1849. Foremost among the citizens of the new territory was her first governor, Alexander Ramsey. Prior to coming to Minnesota, he sat in Congress for two terms as a representative from Pennsylvania, between the years 1843 and 1847. Consequently he was a member of the Congress that employed the designation, "mouth of the St. Louis River," in the Enabling Act that we are here

[1] Document No. 211, 29th Congress, 1st Session, House of Representatives, pp. 16–17.

seeking to interpret. As governor of Minnesota, he was ex officio Superintendent of Indian Affairs. His first official report in that capacity is notable alike for its exhibition of extended acquaintance with preceding history of the Indian and for the humanity and elevated character of its sentiments. But for our purpose, it is most important because he has left a record, not only of contemporary official and popular usage of the phrase before us, but, coming so shortly after his vote upon the Enabling Act, of the sense in which this member of Congress, and no doubt others, employed the term, "mouth of the St. Louis River."

Referring to that marvelous map [1] of the Jesuit fathers, which tradition attributes to the skill and genius of Marquette and Allouez,[2] and particularly to the legend which appears at the present site of Duluth upon the map, he characterizes it as "placed at the extremity of the lake, at the mouth of the present St. Louis river." [3] Looking forward to "the completion of the ship canal around the Falls of St. Mary," which would—

> "Throw open to the keels of steam and sail ships the vast area of navigation covered by the waters of Lake Superior, and give light and development to the great and teeming copper region of Minnesota Territory, upon its western and northern shore, and to the hardly less important lake fisheries near the same vicinity,"

he adds, in a vein characteristic of more recent times:

> "A railroad portage of one hundred miles might then connect Fond du Lac with the navigable waters of the Missis-

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[1] This map is found in Vol. 9, Executive Documents, 1st Session, 31st Congress, 1849–1850, Document No. 69, opposite p. 224, and illustrates the extent and thoroughness of the information of public men of that period as to the ancient history of this region.

[2] Id., p. 9.

[3] Executive Documents, 1st Session, 31st Congress, Vol. 3, Part 2, 1849–50, Document No. 5, p. 1008.

> sippi, and migration and freight find their cheapest and most convenient route between the seaboard and the great valley, by way of the limpid waters of Lake Superior, to the 'Falls of St. Anthony of Padua;' while the falls of St. Louis river will be nearer by the great lakes to New York than Chicago, and St. Paul a less distance from the same city than Galena."[1]

Reflecting, doubtless, the views of Governor Ramsey, three days after the date of his report from which we have just quoted, the new territorial legislature, under date of October 20, 1849, memorialized Congress for—

> "a public road • • • from Point Douglass • • • to the Falls of the St. Louis River, in the northeastern portion of this territory,"[2]

representing among other things that —

> "the hardy and industrious emigrants from the States would pour into these valleys, build themselves homes, and the country now a dense and unpopulated forest, would become a great and flourishing colony."

This memorial was presented to Congress on January 28, 1850.[3]

The transportation needs of the new territory were emphasized and the prayer of the memorial doubtless received support, from a public document dated February 5, 1850, a scant week following the presentation of the memorial to Congress, being the report of an exploration of the Territory of Minnesota by Brevet Captain John Pope. This was presented to the Senate on March 21, and ordered to be printed on March 22, 1850. In his report, the future commander at Cedar Mountain and the

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[1] Executive Documents, 1st Session, 31st Congress, Vol. 3, Part 2, 1849–1850, Document No. 5, p. 1032.

[2] Laws of Minnesota, 1850, p. 169.

[3] Congressional Globe, Vol. 21, Pt. 1, 1st Session, 31st Congress, 1849–1850, p. 228.

ill-starred second battle of Bull Run, emphasized the attention which the Territory of Minnesota had begun to attract "throughout the United States, and particularly among those desirous of emigrating to the West."[1] He dwells on the fact that "the western extremity of Lake Superior projects far into the Territory, affording several fine harbors,"[2] and adds:

> "The examination of a portion of this Territory during the past summer has convinced me that nature has been even more lavish in her gifts of soil than in her channels of communication, and has still left to the enterprise and industry of a man to complete what she has so well begun."[3]

In the report he embodies a map[4] which is substantially a reproduction of the Nicollet map, adding a line on the bank of the river from the north and south boundary line to the Superior Entry, doubtless by way of indicating that that portion of the river constituted a boundary line.

He describes four routes by which emigrants can reach Minnesota, and designates "two other points nearer to the Territory of Minnesota which can be reached by boats, viz: Green Bay and 'Fond-du-Lac,' or the western extremity of Lake Superior."[5] And he advocated that—

> "a railroad from the head of navigation of the Red river to the mouth of Crow-Wing river * * * be prolonged nearly in a straight line to the Fond du Lac,"[6]

adding:

> "I regard it as not at all more difficult to deliver the produce of this whole country at the western extremity of Lake Superior, than it is to deliver the produce of the in-

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[1] Senate Documents, 1st Session, 31st Congress, Vol. 10, 1849–1850, Document No. 42, p. 2.

[2] [3] Id., p. 4.

[4] Id., opposite p. 56.

[5] Id., p. 11.

[6] Id., p. 22.

terior of Wisconsin or Illinois at any point on Lake Michigan. The distance from Buffalo, New York, to Chicago, is little less than to Fond du Lac, and in open steamboat navigation would be of little consequence."

Whatever the definite influences may have been, we find, at any rate, that on July 18, 1850 Congress passed "An Act for the Construction of certain Roads in the Territory of Minnesota," appropriating:

> "For the construction of a road from Point Douglass, • • • to the falls or rapids of the St. Louis River of Lake Superior, fifteen thousand dollars; • • • The said roads to be constructed under the direction of the Secretary of War, pursuant to contracts to be made by him."[1]

While an act of the same session, "An Act to establish certain Post-Roads in the United States," provided for a post road in Minnesota

> "From Point Douglass • • • to the Falls of St. Louis River, of Lake Superior."[2]

With this beginning, we shall find frequent occasion for reference to the mouth of the St. Louis River during the succeeding decade. The matter was first noticed in the Annual Report of the Bureau of Topographical Engineers, of November 14, 1850.[3] After a preliminary survey, notation was made, as follows:

"1st. Road from Point Douglass to the St. Louis river of Lake Superior, 150 miles, at $306 the mile	$45,900 00
"Amount appropriated	15,000 00
"Amount required	30,900 00"

[1] U. S. Stat. L., Vol. 9, 1845–51, Ch. XXIII, p. 439.

[2] Id., Ch. LXXV, p. 494.

[3] Ex. Documents, 2nd Session, 31st Congress, Vol. 1 1850–1851, Doc. 1, pp. 390–392.

The subject was referred to again in the Annual Report for 1851, but Mr. Sibley of Minnesota, in the House of Representatives, was apparently not satisfied with the contents, and under date of December 15,[1] he introduced a resolution by unanimous consent, calling for information. In response thereto, the reports for 1850 and 1851 were briefly epitomized, but especial emphasis and importance was given to the report of J. H. Simpson, the first lieutenant in charge of the survey, dated September 15, 1851,[2] which makes frequent reference to the road and its importance. We cannot forbear quoting from page 10:

> "The Point Douglass and Saint Louis river road is of the utmost consequence in the accommodation it will afford to the lumbering interests high upon the Saint Croix, upon Snake river and Kettle river; this road being the only avenue, especially in the winter, by which supplies can be transported to these points for the maintenance of those engaged in the trade."

Nor this other outburst:

> "But, in addition to all this, the time is not far distant when this territory will be the platform upon which is to be forged the iron link which is to connect the great commercial interests of the east with those of the valley of the Upper Mississippi."[3]

A second letter of November 6, 1851 reports that the survey of the road had been accomplished.[4]

In 1852 the Bureau of Topographical Engineers in charge

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[1] Congressional Globe, Vol. 24, Pt. 1, 1st Session 33d Congress, 1851–2, p. 100.

[2] Executive Documents, 32nd Congress, 1st Session, Doc. 12.

[3] Executive Documents, 32d Congress, 1st Session, Doc. 12. p. 11.

[4] Id., p. 12.

apparently concluded that the interest of Congress in the matter was at an end and made no estimates.[1]

Chapter VII, Laws of 1853,[2] appropriated $20,000 for the construction of the road.

In the report of the Bureau of Topographical Engineers under date of December 2, 1853, the following estimate is made:

> "Road from Point Douglass to St. Louis river of Lake Superior ---------- $20.000"[3]

Appendix B of this report details the expenditure of $19,459.67 on the road.[4]

Such was the history of the project, preceding the discussion and legislation which now reflected congressional understanding of the phrase under scrutiny. This was briefly detailed by Mr. Farley on the floor of the House of Representatives which had resolved itself into a committee of the whole, on May 1, 1854.[5] He then explained certain pertinent amendments, as follows:

> "The first of these amendments is in relation to the termination of the road which commences at Point Douglass, and leads to the falls or rapids of the St. Louis river of Lake Superior. The former appropriations required the road to terminate at the falls or rapids of the St. Louis river; but it is now proposed to change the road, and instead of having its termination at that point, to have its termination at the mouth of said river, at its connection with Lake Superior.
>
> "The reasons of this change, are these: If the road terminated at the falls or rapids of the St. Louis river, it would not terminate at good navigation, and would involve the necessity of transportation around the falls of the St. Louis

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[1] Senate Doc. 1, Report of Bureau of Top. Engrs., Nov. 18, 1852, Senate Documents, 2nd Session, 32d Congress, p. 217, 218.

[2] U. S. Stat. L., Vol. 10, p. 150.

[3] Senate Documents, 1st Session, 33d Congress, Vol. 3, 1853-1854, Sen. Doc. 1, p. 4.

[4] Id., p. 28.

[5] Congressional Record, Vol. 28, Part 2, p. 1031.

river. If, on the contrary, the terminus is at Lake Superior, then the road terminates at good navigation, and saves the cost and trouble of transportation around the falls, and will be of great convenience to that section of the country, which is rapidly becoming settled. There is another fact in favor of this change of termination. It is this: that the lands in the neighborhood of Lake Superior, where it is proposed, by the amendment, to have the road terminate, have been reserved by the President of the United States for military purposes. This is the most important amendment that has been proposed, and it meets, as I understand, with the approbation of the settlers in that section of the country, and with the approbation of the officers of the Government here, who have given the matter investigation and consideration. I will state that all of these roads are of a military character."[1]

He also read into the record a short extract from a letter from the civil engineer in Minnesota, who stated:

"There is no advantage whatever to be derived from its present location on this river; whereas, if it should be changed, so as to run to the mouth of the St. Louis river, it would terminate at a good harbor on that lake, and be of great advantage to the many settlers who will soon be upon the borders of this lake."[2]

On May 3, 1854, the bill having passed the House, was sent to the Senate.[3] Under date of June 14, the bill was transferred from the committee on military affairs to the committee on territories.[4]

On July 6, 1854, on motion of Mr. Douglas, for whom Douglas County was named, who had reported the bill for Wisconsin's statehood, and to whom reputation assigns an interest in the original town-site of Superior, the Senate, in committee of the whole, proceeded to the consideration of the House bill. He stated:

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[1] Id., p. 1032.
[2] Id., p. 1032.
[3] Congressional Globe, Vol. 28, Part 2, p. 1059.
[4] Id., p. 1389.

> "It proposes to appropriate for the continuation of the road from Point Douglass, on the Mississippi river, to the mouth of the St. Louis river, of Lake Superior, $20,000."[1]

On July 15, 1854, the bill was signed by the President of the Senate.[2] The same was approved by the President July 17, 1854, as Chapter 85 of the Laws of 1854,[3] and by its terms made appropriation—

> "For the continuation of the road from Point Douglas, on the Mississippi River, to the mouth of the St. Louis River, of Lake Superior, in Wisconsin, twenty thousand dollars;"

with the following proviso:

> "Provided, That so much of any former acts as require the first-mentioned road to terminate at the falls or rapids of said St. Louis River, are hereby repealed."

Notwithstanding the change in the road thus made, the same session of Congress continued the post road from Point Douglas to the falls of St. Louis River of Lake Superior, but also supplied a very interesting variation in usage by making provision for a post road—

> "From St. Paul, by Stillwater and St. Croix Falls, to the mouth of Left-Hand River, at Fond du Lac, in Wisconsin."[4]

thus identifying the Fond du Lac, or head of the lake, with a point substantially opposite the entrance, or mouth of the St. Louis River.

This provision, having been made doubtless in direct response to the memorial of the territorial assembly, dated March 4,

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[1] Congressional Globe, Vol. 28, Part 3, p. 1622.

[2] Id., p. 1739.

[3] Vol. 10, U. S. Stat. L., p. 306.

[4] Act. of Aug. 3, 1854, Vol. 10, ch. 230, U. S. Stat. L., p. 349, 536.

1854, which memorialized Congress for the establishment of a route—

> "1st. From St. Paul by way of Stillwater and St. Croix Falls to the mouth of Left Hand River, at Fond du Lac of Lake Superior, State of Wisconsin."[1]

This was presented to Congress on June 12, 1854.[2]

Following the change in the terminus of the road thus made, we find that in the next annual report of the Captain of Topographical Engineers in charge of the project, dated Sept. 15, 1854, under the title, "Road from Point Douglas to the mouth of the St. Louis river of Lake Superior in Wisconsin," is the statement that—

> "This road has been surveyed and staked out from Point Douglas to the falls of the St. Louis river, the most northern terminus, according to the acts of July 18, 1850, and January 7, 1853; and has been constructed from mile station 21 to mile station 78, a distance of fifty-seven miles; three-fourths of the distance being through dense heavy woods, and a considerable portion of it involving some deep and difficult cutting and the construction of a large number of culverts and bridges, two of the latter, that over Deep ravine, near Stillwater, and that over Sunrise river, being of a considerable character. I have stated that the road has been surveyed and staked out from Point Douglas to the *falls* of the St. Louis river, the northern terminus, according to the acts of July, 1850, and January, 1853. But a more recent act—that of July last—provides that so much of any former act as requires the road to terminate at the *falls* or rapids of the St. Louis river be repealed, and makes the *mouth* of the St. Louis river, in Wisconsin, the terminus. This being the case, the survey and location of the road will have to be extended from the *falls* of the St. Louis river, * * * to the *mouth* of that river."[3]

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[1] Laws of Minnesota, 1854, p. 168.

[2] House Journal, 1st Session, 33d Congress, 1853–54, p. 983.

[3] Senate Documents, 2nd Session, 33d Congress, Vol. 2, 1854–55, Ex. Doc. 1, p. 345.

The next year, or in the report for 1855, we are told, under the heading, "Point Douglas and St. Louis River Road":

> "This road (see accompanying map, illustrative of all the roads) extends from Point Douglas, at the confluence of the Ct. Croix with the Mississippi river, to the mouth of the St. Louis river, at Superior, on Lake Superior, in Wisconsin. * * * Operations on this road would have been commenced immediately on the receipt of intelligence from the bureau of the appropriation of July, 1854; but the act requiring a change in the location of the terminus from the falls of the St. Louis river in Minnesota, to the mouth of said river in Wisconsin, and the department requiring of me a report upon the proper mode of extending the road, I did not feel authorized to commence operations until the department could give its decision with regard to the extension, and this decision I did not receive till October 5. According to this decision, the extension was to commence at or near the 169th mile station, (4½ miles from the falls of the St. Louis river, the old terminus,) and to run in as direct a line as practicable to the mouth of the St. Louis river, the new terminus. Embraced also in this decision was the requirement that I should expend the appropriation of July, 1854, in the construction of this extension, and any balance which might remain was to be expended in any additional work which might be required on any part of the road from Point Douglas to the mouth St. Louis river."[1]

Reference is then made to a letter which he had written November 6, 1854, setting forth,

> "that it is of the utmost importance that a practicable wagon communication be at once effected between the head of Lake Superior and the valley of the St. Croix; and as this can only be accomplished by applying the late appropriation to *as great an extent of the road as possible*, commencing at its most northern terminus, the mouth of the St. Louis river."[2]

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[1] Senate Documents, 1st and 2nd Sessions, 34th Congress, Vol. 2, 1855–56. Doc. No. 1, p. 469.

[2] Id.

Having received this authority, he states that he "advertised for proposals," and illustrating that the mouth of St. Louis river and the city of Superior were identical points he speaks of "the northern extension to Superior" and "* * * the first seven miles out from Superior."[1]

An interesting sidelight upon its progress is found in the record as this road was the one referred to by Colonel Hays, when he said:

> "There was no communication with civilized life except by lake and what was called the Military road cut in 1854 or '55 or '56, along there, from here to St. Paul, via Taylor's Falls,"[2]

And it was over this trail that the witness Hays came to the city of Superior.

> "From Taylor's Falls up to St. Croix, and thence on a rough trail cut out to here, cut out in the winter of 1853 or '4."[3]

The map referred to is found in Senate Documents, 1st and 2nd Session, 34th Congress, Vol. 4, being a volume devoted to maps exclusively. The map is designated, "Map of the General Government Roads in Minnesota and Wisconsin, September 1855, accompanying Annual Report, September 20, 1855, J. H. Simpson, Corps Topl. Engrs,"[4] and the same is reproduced herewith.

The report of the year following contains but a scant reference to the "Road from Point Douglas to the Mouth of St. Louis

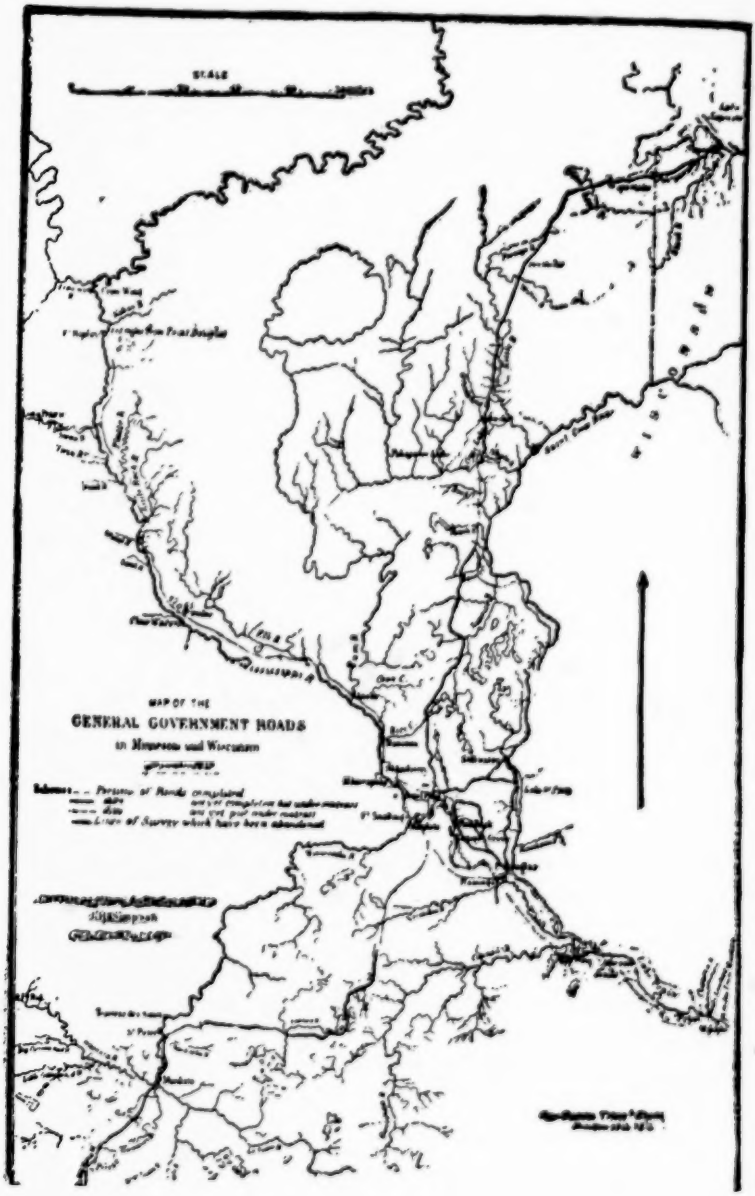
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[1] Senate Documents, 1st and 2nd Sessions, 34th Congress, Vol. 2, 1855–56. Doc. No. 1, p. 470.

[2] Record page 450.

[3] Id.

[4] The report is also found in Executive Documents, 1st Session, 34th Congress, Vol. 1, Part 2, p. 468.


SCALE
MAP OF THE
GENERAL GOVERNMENT ROADS
in Minnesota and Wisconsin

River."[1] Congress, however, under the provisions of Chapter 106, Laws of 1857, made an appropriation—

> "For completing the Point Douglas and Saint Louis River road, thirty-one thousand four hundred and twenty-five dollars and fifty cents."[2]

In the report for 1857, reference is made to the "general map of the roads accompanying the annual report of my predecessor in 1855."[3] In the report of the officer in charge, it is said:

> "This road extends from Point Douglas at the confluence of the river St. Croix with the Mississippi river, to the mouth of St. Louis river, at Superior, Wisconsin, being a distance of about 181 miles."[4]

The condition of the road from Superior to Twin Lakes, a distance of 21 miles, is discussed. The burning of a bridge three miles out of Superior is referred to, and mention is made of "the importance of this road to Minnesota and Wisconsin • • • connecting, as it does, • • • the head of navigation of the Mississippi river with Lake Superior at its nearest practicable harbor."[5]

Colonel Abert, Corps of Topographical Engineers, refers to the "Road from Point Douglas to the mouth of St. Louis River," saying:

> "The completion of this road is eminently important both to Minnesota and Wisconsin."[6]

The report from his subordinate uses the same title for the road,[7] emphasizes its importance,[8] and gives a tabular statement of the amounts appropriated and expended on the road.[9]

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[1] Executive Documents, 3d Session, 34th Congress, Vol. 1, Part 2, 1856–57, p. 369.
[2] Vol. 11, U. S. Stat. L., p. 203.
[3] Sen. Docs., Vol. 3, 1st Session, 35th Congress, 1857–58.
[4] Id., p. 349.
[5] Id., p. 351.
[6] Sen. Docs., 1st Session, 35th Congress, Vol. 3, 1857–58, p. 292.
[7] [8] [9] Id., pp. 349, 351, 355.

In the report of October, 1858, reference is made to the report of the preceding year, on the road from Point Douglas to the mouth of the St. Louis river.

> "The *survey* and *location* of this road throughout its whole extent (178 miles) is completed."[1]

Reference is made to the map which we have introduced, and the "Road from Point Douglas to the mouth of St. Louis river" is discussed in detail and its importance again emphasized.[2] We find an estimate of the amount of work required to complete the road from Point Douglas to the mouth of the St. Louis river, the last section being described as "Twin Lakes to Superior—21 miles,"[3] so that the mouth of the St. Louis river and the city or village of Superior, or Lake Superior, are interchangeable points.

In the report for 1859–60, with reference to the road from Point Douglas to the mouth of St. Louis river," the statement is made that—

> "This road connects the head of navigation of the great lakes with the Mississippi, and its commercial importance cannot be too highly regarded."[4]

The sentence already quoted was from a prior report which contained an estimate "for the completion of the road • • • to its termination, at the mouth of the St. Louis river."[5] A recapitulation refers to the "Road from Point Douglass to mouth of St. Louis river," and the estimate of additional amounts

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[1] Ex. Docs., 2nd Sess., 35th Cong., Vol. 3, 1858–59, p. 1193.
[2] Id., p. 1195.
[3] Id., p. 1201.
[4] Sen. Docs., 1st Sess., 36th Congress, Vol. 2, 1859–60, Doc. No. 2, p. 691.
[5] Sen. Docs., 1st Session, 36th Congress, Vol. 3, 1859–60, Ex. Doc. 2, p. 857.

uses the same phrase.[1] And again, the last station is described as from "Twin Lakes to Superior, twenty-one miles."[2]

In the report for 1860, we find a further estimate for "Road from Point Douglas to mouth of St. Louis river, $50,000."[3] It is referred to as being unfinished, by the same title,

> "and the estimate submitted for its completion, embraced that portion of the road which extends northwardly from that point, to its termination at St. Louis river, on Lake Superior."

and its almost incalculable importance again emphasized.[4]

With the coming of the Civil War, this project, like many others, was set aside, and further reference to the same in the reports of the war department was discontinued. Numerous exhibits in evidence in the present case, however, most interestingly map the course of this road, remote from the vicinity of Big Island, and show its course directed straight for the Superior Entry. It is shown on Minnesota Exhibits 5, 6, 9, 10, 23, 12, 24, 25, 26, and 27. Exhibit 13 traces the road most clearly, while upon Exhibit 53, which was a map published in 1857, it is specifically designated as the Point Douglas Military Road. Minnesota Exhibits 48, 57, and 58 show the road without any designation of its character.

d. Usage of the term "Mouth of St. Louis River" by the President, the Secretary of War, and in the reports of the Commissioner of the Land Office, relating to military reservation on Minnesota Point.

The court has noted that one reason assigned for changing the terminus of the road, whose vicissitudes we have just discussed

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[1] Senate Documents, 1st Session, 36th Cong., Vol. 3, 1859–1860, Ex. Doc. 2, p. 863.

[2] Id., p. 864.

[3] Sen. Docs., 2nd Sess., 36th Cong., Vol. 2, 1860–61, p. 295.

[4] Id., p. 573.

was "that the lands in the neighborhood of Lake Superior" at the new terminus had "been reserved by the President of the United States for military purposes." Possibly the strategic location of the point was deemed such that the President felt that fortifications at that point were among the means "of facilitating and protecting the lives and the property of the people."[1] Whatever the reason, we find that on March 13, 1854, following the approval of the survey on September 15, 1853 by the Surveyor General, as shown on Wisconsin's Exhibit 15, an order was made by the President reserving "fractional sections 27, 28, 29, and three-fourths of a mile of the north or left cape of river, township 49 N., range 13 W. of the fourth P. M."[2]

The reason why the subdivision number was not given for Minnesota Point was doubtless that it had not yet been surveyed. The volume in which the foregoing quotation appears contains this further language,

> "The lands in Wisconsin in sections 27, 28, and 29 have been mostly released from reservation and disposed of. Of the reservation in Minnesota, in sections 19 and 20, township 49 N., range 13 W., the only tract now reserved is lot 1 of section 20, containing 7.32 acres. It includes 'Minnesota Point.'"

Under title "WISCONSIN" appears, "On Saint Louis River.—(See Minnesota.)"[3]

Further illustration of usage is found in a volume entitled "United States Military Reservations, National Cemeteries and Military Parks," prepared in the office of the Judge Advocate General, United States Army, Revised Edition, 1916, Government Printing Office, Washington, p. 213:

> "St. Louis River Military Reservation.
> "This reservation is situated in St. Louis County, on the

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[1] See quotation from Mr. Gray, p. 72 of this brief, supra.

[2] U. S. Land Laws, Local and Temporary, Vol. II, p. 1178, title, "On Saint Louis River in Minnesota and Wisconsin."

[3] Id., p. 1183.

extremity of Minnesota Point, at the mouth of the St. Louis River, Lake Superior, and comprises a portion of sec. 20, T. 49 N., R. 13 W. The area in section 20 was originally 7.32 acres, but this has since been increased by the filling of submerged lands with dredged material in the improvement of navigation to about 46 acres, and is being further increased by dredging operations. It is occupied in part by the Lighthouse Establishment and in part in connection with river and harbor improvements.

"*Title.*—Originally reserved, along with other lands, by Executive order dated March 13, 1854, but upon the recommendation of the War Department the President, by order dated January 11, 1855, canceled the previous order except as to the tracts in fractional sections 20 and 28. By decision of the Secretary of the Interior, dated September 21, 1893, in the case of United States v. Joseph A. Bullen, the tract in fractional section 28 (lots 1 and 2) was awarded to said Bullen. The reservation as now held by the United States embraces a portion of fractional section 20, as above stated."

It is no doubt this order of January 11, 1855 that is referred to upon the face of Wisconsin's Exhibit 15, found at page 70, supra, where the Court will note the legend, "Sections 27 & 29 released by order of the President. See Commissioner's letter of Jan. 18/55." Such has been the uniform usage of the Department of the Interior and of the General Land Office.

We find this language consistently used by the department.

"(Name and location of reservation.) Reservation on St. Louis River, in Minnesota, lot 1, sec. 20, T. 49 N., R. 13 W. (Area in acres.) 7.32 (Date of President's order or other authority, and remarks.) President's order, Mar. 13, 1854."[1]

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[1] Reports of the General Land Office for the following years: 1884–1888, incl., 1890–1904, incl.: 1884, p. 42; 1885, p. 153; 1886, p. 247; 1887, p. 224; 1888, p. 173; 1890, p. 172; 1891, p. 144; 1892, p. 233; 1893, p. 152; 1894, p. 251; 1895, p. 228; 1896, p. 203; 1897, p. 201; 1898, p. 221; 1899, p. 226; 1900, p. 222; 1901, p. 260; 1902, p. 221; 1903, p. 411; 1904, p. 142.

Such, then, was the phrase appropriately employed by the President in reserving the points of land on either side of "the entry" and such has been the constant usage of the War Department and of the Department of the Interior from the date of the President's reservation six years after the admission of Wisconsin to the Union and continuously to the present time.

e. Usage of "Mouth of St. Louis River" and "St. Louis River" in connection with lighthouses at the "Entry."

Almost on the anniversary of the reservation of Minnesota Point for military purposes, provision was made by Congress in 1855 "for the building of a lighthouse on the government reservation at Minnesota Point, near the head of Lake Superior, in the Territory of Minnesota, fifteen thousand dollars."[1] So far as we have been able to ascertain, this legislation was preceded by no specific memorial of the Minnesota legislature or recommendation of the Lighthouse Board. The earlier demand of Mr. Gray for lighthouses, to which we have referred,[2] and the coming of the "keels of steam and sail" which Governor Ramsey had predicted,[3] may sufficiently account for the legislation. Following its enactment we find reference in 1856 to the lighthouse "authorized to be built at Minnesota Point, at the head of Lake Superior."[4]

The annual report for 1857 notes progress in the construction

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[1] U. S. Stat. L., Vol. 10, ch. 175, p. 671, 2d S., 33d Cong.

[2] This brief, p. 72, supra.

[3] This brief, p. 73, supra.

[4] Senate Documents, Vol. 1, 3d S., 34th Cong., 1856–57, p. 603.

of the lighthouse, describing it in the same words.[1] The following year it was "finished and lighted."[2]

Presumably the stress of the Civil War caused an abatement in attention to its maintenance, for in 1867 we find repairs of considerable importance were required.[3] In 1868 their nature was detailed.[4]

Curiously enough, the inception of the controversy between Duluth and Superior for commercial preeminence was to result in the employment of terminology with reference to the lighthouse, decisively illustrating the continuous meaning of the term "mouth of the St. Louis River" to be as Wisconsin contends.

In the report of the Lighthouse Board for 1870 we find under the notation "Duluth, Minnesota, Lake Superior," after noting the rise of Duluth in importance and a number of petitions for the construction of a lighthouse upon the Minnesota shore, it continues "although there is a lighthouse at Minnesota Point at the mouth of the St. Louis River, Superior City, yet it only serves as a general guide for that side of the lake."[5]

In 1875 the Board reports repairs of the lighthouse, "*Minnesota Point*, Mouth of St. Louis River, Lake Superior, Minnesota."[6] The two following years saw the same statement made.[7]

From the report of the next year we learn of new developments in this vicinity, for it is said, under the heading, "*Minnesota*

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[1] Report of Lighthouse Board, Nov. 1, 1857, Exec. Doc., 1st S. 35th Cong., H. R., Vol. 1, Doc. 3, p. 229 at 255.

[2] Report of Lighthouse Board, Oct. 1, 1858, Senate Doc., 2d S., 35th Cong., Vol. 6, part 1, p. 287.

[3] Report of Lighthouse Board, Nov. 2, 1867, 2d S., 40th Congress, Exec. Doc., H. R. No. 2, Vol. 5, p. 236.

[4] Report of Lighthouse Board, Nov. 6, 1868, 3d S. 40th Congress, H. R., Exec. Doc. No. 2, Vol. 5, p. 383.

[5] Report of Lighthouse Board, Financial Report and Report of the Comptroller of the Currency, 1870, 3d S., 41st Congress, H. R., Ex. Doc. No. 2, p. 391.

[6] Report of Lighthouse Board, 1875, p. 70.

[7] Report of Lighthouse Board, 1876, p. 55; Report of Lighthouse Board, 1877, p. 47.

Point, Lake Superior, Minnesota.—The work of constructing the pier head light on the pier at the mouth of Saint Louis River was commenced in June 1878."[1] The new project was completed by the date of the next report, where it is said, "*Saint Louis River, Lake Superior, Minnesota.*—The pier head light at this point has been constructed, and the light on Minnesota Point discontinued."[2] But apparently the new light was not a success, for after another interval of a year we are told, "*Saint Louis River, Lake Superior, Minnesota.* The light on the pier at the mouth of the Saint Louis River has been discontinued and re-established on Minnesota Point."[3]

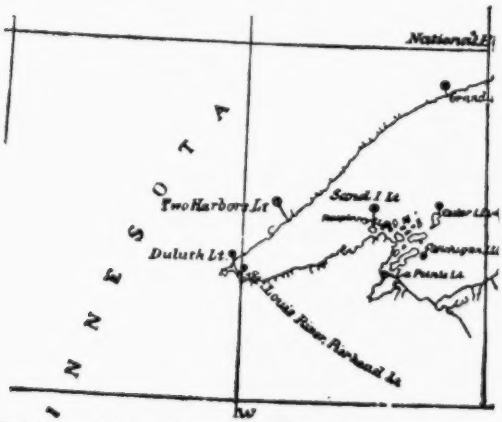
For the four years following, the light is described as located at Minnesota Point.[4] But in 1885 the official report advises, "*Saint Louis River Pier head, mouth of Saint Louis River, Lake Superior, Minn.*—This light was re-established using gasoline as the illuminant."[5]

In 1886 we are told, as to No. 910, "*Saint Louis River pier-head, mouth of the Saint Louis River, Lake Superior, Minnesota.*—The illuminating apparatus, which had been delayed on the road, was delivered on July 22, and the station, which is illuminated with gasoline, was relighted." As to "*Minnesota Point, Lake Superior, Minnesota.*—The work of repairing and renovating the keeper's dwelling was completed on July 9, 1885. The building is occupied by the keeper of the Saint Louis River light-station. This light was discontinued on August 6, 1885."[6]

As typical of many maps, we reproduce from this volume part of a map of the Eleventh Lighthouse District, showing the designation, "Saint Louis River Pierhead Light."

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[1] Ann. Rep. of Lighthouse Board, 1878, p. 56.
[2] Ann. Rep. of Lighthouse Board, June 30, 1879, p. 60.
[3] Ann. Rep. of Lighthouse Board, 1880, p. 58.
[4] Ann. Reports, Lighthouse Board, 1881, p. 65, 1882, 1883, 1884, Maps.
[5] Ann. Rep. of Lighthouse Board, 1885, p. 77.
[6] Ann. Rep. of Lighthouse Board, 1886, p. 80.



Portion of Map 11th L. H. Dist., from Rep. of Lighthouse Board, 1886.

The next year saw the notation, "Repairs, more or less extensive, were made at the following named stations: * * * 925. St. Louis River pier-head, Minn."[1]

In 1888 Repairs, "976, Saint Louis River pierhead, Minnesota,"[2] were noted, and the map designates, "St. Louis River Lt."

In 1889 we find the same usage.[3] In 1890 first appears the designation, "Superior Pierhead"[4] while the map still indicates the "St. Louis River Light." With the increase of lights and the necessity of distinguishing the piers that were soon to be placed in the Saint Louis River the use of the term disappears and thenceforth all references are to the "Superior Light" and the "Superior Pierhead Light" both in text and maps. But for an even twenty years we find the continuous use of the term "mouth of the Saint Louis River" with a fixed and unvarying significance.

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[1] Ann. Rep. of Lighthouse Board, 1887, p. 93.
[2] Ann. Rep. of Lighthouse Board, 1888, p. 138.
[3] Ann. Rep. of Lighthouse Board, 1889, p. 148.
[4] Ann. Rep. of Lighthouse Board, 1890, p. 163.

And as the needs of commerce required that the waters further up toward Grassy Point should be lighted, Congress consistently made provision therefor, upon the theory that the same were a river and not a portion of the lake, as appears from the language used in many statutes under the heading, "Lighting of Rivers,—Channels in Saint Louis and Superior Bays, at the head of Lake Superior."[1]

The court will find interesting confirmation of the usage of these executive documents upon the exhibits introduced and appearing in the record. Upon Wisconsin's Exhibit 1 we find the designation, outside "The Entry," "St. Louis River Pierhead L. H." while on Minnesota Point the lighthouse which we have noted, so often referred to as at the "mouth of the St. Louis River," is labeled "discontinued." Wisconsin's Exhibit 26, prepared prior to the construction of the lighthouse, shows no designation. On Wisconsin's Exhibit 27 we find the lighthouse shown on Minnesota Point. On Wisconsin's Exhibit 31-B, being an earlier edition of the Meade Map, the lighthouse is shown only on Minnesota Point.

That such was the usage of the Lighthouse Board which communicated itself to the public at large finds interesting confirmation in the record. We find Mr. Bardon testifying that the mouth of the St. Louis River was the entrance between Minnesota and Wisconsin points; that this was impressed on his memory by his—

"visits to the light-house. The reports • • • were made

[1] U. S. Stat. L., Vol. 31, Ch. 791, 1st Sess., 56th Cong., p. 596, Ch. 853, 2nd Sess., 56th Cong., p. 1140; Vol. 32, Pt. 1, Ch. 1301, 1st Sess., 57th Cong., p. 433, Ch. 1007, 2nd Sess., 57th Cong., p. 1094; Vol. 33, Pt. 1, Ch. 1762, 2nd Sess., 58th Cong., p. 469, Ch. 1483, 3d Sess., 58th Cong., p. 1173; Vol. 34, Pt. 1, Ch. 3914, 1st Sess., 59th Cong., p. 713, Ch. 2918, 2nd Sess., 59th Cong., p. 1320; Vol. 35, Pt. 1, Ch. 200, 1st Sess., 60th Cong., p. 334, Ch. 299, 2nd Sess., 60th Cong., p. 972; Vol. 36, Pt. 1, Ch. 384, 2nd Sess., 61st Cong., p. 754.

out designating it the entrance or the mouth of the St. Louis."[1]

He records his own impression that it should have been between Connor's and Rice's Points. On cross examination, he testified again that he and the boys "noticed that the entry there was on the records as the mouth of the St. Louis."[2]

f. The terms, "Mouth of St. Louis River" and "St. Louis River" employed in acts and memorials of territorial legislature of Minnesota.

The act establishing the territorial government of Minnesota bounded the territory by "the western boundary line of said State of Wisconsin."[3] It also provided:

> "'All the laws passed by the legislative assembly and gowernor shall be submitted to the Congress of the United States, and, if disapproved, shall be null and of no effect."[4]

As a result, Congress must have had submitted to it many illustrations of the use of the term, "mouth of the St. Louis River," during the years that intervened until Minnesota was admitted as a state.

To George R. Stuntz, of whose activities we have seen much and shall see more, was granted the privilege—

> "of keeping and maintaining a ferry across the St. Louis River, in the county of Itasca, in the Territory of Minnesota, from a point at the mouth of the said St. Louis river, known as the Minnesota or Stuntz's Point, to the town of

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[1] Record, page 866.

[2] Record, p. 886.

[3] U. S. Stat. L., Vol. 9, 1845–51, Ch. 121, 2nd Session, 30th Congress, Sec. 1, p. 403.

[4] Id., sec. 6, p. 405.

> Superior, and a point known as the Wisconsin Point, in Douglas County."[1]

This law must have overlooked an earlier chapter of the same session, which provided for the subdivision of the county of Itasca, placing the point in question in a new county. This county, in commemoration perhaps of his visit to the mouth of the St. Louis River some thirty-five years earlier, elsewhere noted, was to be designated as the county of Doty, and a portion of its boundaries was defined as being—

> "to Dead Fish lake; thence through the center of said Lake, and down the center of the channel of the St. Louis river to its mouth; thence along the north shore of Lake Superior—"[2]

indicating that in the judgment of the legislature, the north shore of Lake Superior commenced at the mouth of the St. Louis River. Doty, however, had figured a short two years earlier as one of the incorporators of the Lake Superior, Puget Sound, and Pacific Railroad Company, whose route was to lie "from the head of Lake Superior" westward.[3]

The preceding chapter of the laws of that year provided for a railroad—

> "from some convenient point in the City of St. Paul, to some convenient point at, or near the Falls of the St. Louis river, or anywhere between the Falls and the mouth of said river, or at any eligible point upon Lake Superior near the mouth of the said river."[4]

Among the incorporators were Alexander Ramsey, Governor of the Territory, whose understanding of the location of the mouth

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[1] Session Laws of the Territory of Minnesota, 1855. Ch. LVI, p. 145.

[2] Session Laws of the Territory of Minnesota, 1855, Ch. VI, p. 27.

[3] Session Laws of the Territory of Minnesota, 1853, Ch. XVI, p. 50.

[4] Id., Ch. XV, p. 47.

of the St. Louis River has already been chronicled; H. M. Rice, delegate in Congress, and W. G. Le Duc, who two years earlier had made of record his understanding:

> "Fond du Lac is a very old settlement on the St. Louis River, twenty-two miles from its entrance into Lake Superior."[1]

The next year saw the spawning of another corporation in the prolific legislative hatchery, which was to run—

> "from a point on the North-West shore of Lake Superior in Minnesota Territory, north of the St. Louis River, opposite the entrance of the Left Hand River into Lake Superior; and near the mouth of the St. Louis River, Minnesota, on Lake Superior, by way of St. Anthony and St. Paul, Minnesota."[2]

Not content with the matter coming to the attention of Congress through the medium of submitting the law for its approval, contemporaneously with the enactment of the law, a memorial was sent to Congress for a grant of land. The territorial body adopted a—

> "Memorial to Congress for a grant of lands for the construction of a Railroad from some point on Lake St. Croix, to St. Paul and St. Anthony, and thence to the Western Boundary of the Territory, the Red River of the North, and the St. Louis River."[3]

This memorial set forth among other advantages that—

> "4th. The Falls of the St. Louis River, at the head of its navigation, are only twenty miles from the Lake, and are readily accessible for vessels of the largest class."[4]

But the act of 1854 had contained a provision that "any lands that may be granted to the said Territory to aid in the con-

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[1] Year Book of W. G. Le Duc, for 1851.
[2] Session Laws of the Territory of Minnesota, 1854, Ch. 47, p. 123.
[3] Id., p. 159.
[4] Id., p. 160.

struction of the said railroad" were to be granted to the new corporation "in fee simple, absolute."[1] As a result, there was introduced in the House on January 29, 1855 "A resolution to disapprove and disaffirm an act of the Legislative Assembly of the Territory of Minnesota, entitled 'An act to incorporate the Minnesota and the Northwestern Railroad Company,'" and much discussion ensued.[2] Finally, Mr. Rice presented a resolution voiding all of the railroad acts to which we have referred.[3]

It is of interest to note that Mr. Douglas, of Illinois, stated:

> "The question is depending before the Supreme Court in the chamber below."[4]

In this unexpected quarter, we find reference to—

> "an act of incorporation by the legislature of the said Territory, passed March 4, 1854, and by which they were empowered to construct a railroad from a point on the northwest shore of Lake Superior, and near the mouth of the St. Louis River, across the said Territory of Minnesota."[5]

We are not concerned with the fate of the resolutions. But we have seen that these charters with their frequent references to the mouth of the St. Louis River, the falls of the St. Louis River, the head of Lake Superior, and the definiteness with which they are located, came before Congress not as a mere matter of perfunctory routine approval of the territorial acts but for the precise and definite consideration which has been detailed. The Civil War soon occupied the minds of men to the exclusion of optimistic projects for internal improvements. But after the war, when enterprise and ambition resumed their normal play,

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[1] Id., p. 124.

[2] Congressional Globe, Vol. 30, 2nd Sess., 33d Cong., 1854–55, p. 450, et seq.

[3] Id., p. 482.

[4] Congressional Globe, Vol. 30, Part 2, p. 1137.

[5] *United States v. The Minnesota and Northwestern Railroad Co.*, 18 Howard, 241.

we find repeated occasion for reference by Congress to the "St. Louis River" at points much farther down the course of the waters than Minnesota now claims the mouth of the river to be.

g. Miscellaneous illustrations of usage between the date of the Wisconsin Enabling Act in 1846 and that for the admission of Minnesota in 1857.

Before the discussion of such usage, it seems logical to turn aside and gather up certain additional items of evidence connected with the settlement of the city of Superior, incident to the development of the new community, prior to the passage of the Enabling Act for the establishment of Minnesota, which by reference in practical effect incorporated into its boundary that portion of the St. Louis River from its mouth to the falls. Among such illustrations, we find two passages in a book entitled, "Wisconsin and Its Resources," published by Charles Desilver and Keen & Lee in 1857, the same having been written by one James S. Ritchie, who is described in the testimony of Colonel Hayes as "an early settler, a lawyer, district attorney, and owner of a good deal of real estate."[1] The edition from which extracts were incorporated into the record appears to have been one of 1860, but there was an earlier edition, to which we have referred, in 1857. The extracts introduced in evidence were as follows:

> "The St. Louis river, considered as the primary source of the St. Lawrence, flows some thirty miles along the northwestern part of the State; it is navigable a short distance from its mouth, and will be more fully described in Part II. of this work."[2]
>
> "The St. Louis River rises in the northeastern part of Minnesota and enters Lake Superior on the west. It is extremely

[1] Record page 461, fol. 698.

[2] *Wisconsin and Its Resources,* by James S. Ritchie, p. 75.

rocky, and so full of sunken boulders and dangerous rapids that it never could be made navigable further up than Fond du Lac, which is twenty miles from the City of Superior. The action of its waters, and those of the lake, have formed a narrow strip of land, about seven miles in length, jutting out from the Minnesota shore, which, in connection with a similar point from the Wisconsin shore, in an opposite direction, forms the Bay of Superior. At the head of this bay the river again widens out into another bay of about the same size, which is called the Bay of St. Louis; from thence to Fond du Lac, the old trading-post of the Fur Company, the river is wide, and of sufficient depth to admit the passage of any of the craft which ply upon the lake. It is somewhat crooked, containing numerous islands, some wooded, and others covered with excellent grass, and fields of wild rice. The St. Louis flows through a rich alluvial bottom, from one to three miles in width, partly timbered, and partly covered with natural meadows. From the Bay of St. Louis to the falls, its northern shore is bold and rugged; the bluffs on the south side are similar to those of the north for several miles below the falls. Immense quantities of excellent stone, suitable for building purposes, and slate, are on its banks, and from the surface indications we would infer that valuable mineral ores abound. During the past winter the lumbermen have not been idle; the first raft consisted of twenty-nine hundred logs, and was towed by the steamboat James Carson, on the 24th of May, from near Fond du Lac to the Duluth mill.'"[1]

The description of the river, as the court will notice, is substantially a reproduction of the language that appeared in the report of David Dale Owen.[2]

To the testimony of Colonel Hayes we are also indebted for Wisconsin's Exhibit 26, which was "a lithographic copy reduced in scale from the original map of Superior, published about '56. Extensively circulated and much used in those days." Gotten

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[1] *Wisconsin and Its Resources*, by James S. Ritchie, pp. 254–5. Rec. p. 461, 462, Fol. 699, 700.

[2] See pages 61–2 of this brief.

out by "the proprietors of Old Superior."[1] This plat which had been in his possession and ownership since 1856, showed that lots had been platted into the water, on "submerged lands in fact, in front of the shore line." Titles had been passed based on the fact that they were in a river and not a lake.[2] Extensive improvements had been made on those lots, amounting in value to hundreds of thousands of dollars.[3] Very many of the lots were submerged, and to make title, "they had to designate and regard and hold these waters to be a river."[4]

This vital factor in the development of the new city, and the uniform consideration of the submerged lots opposite the Superior Entry as being located in a river, was confirmed by the testimony of Mr. Butler a few pages later, who was a lawyer of thirty-three years standing in the city of Superior, connected with an abstract office part of the time, who testified that "titles have been passed to such properties on the theory that they are properties in a river."[5] Under the law in Wisconsin, based on the fact that Superior Bay is a river he testified that improvements had been made, whose value would be "beyond a million dollars," and if Superior Bay were a lake, there would be no title to these properties.[6]

The correctness of the views of Colonel Hayes and Mr. Butler as to the very waters in dispute has been sanctioned by the court of last resort in the State of Wisconsin, to whose opinion we shall make further reference.[7]

Turning again to the record, we find that the first efforts toward the improvement and safeguading of navigation, whose subsequent extension was to prove so rich and fruitful in usage

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[1] Record page 458, Fol. 695.
[2] Record, p. 459.
[3] Record, p. 460.
[4] Record, p. 466.
[5] Record, p. 475.
[6] Record, p. 476.
[7] *Bright v. Superior*, 163 Wis. 1.

had to do with the mouth of the St. Louis River. James Bardon, who testified to the extensive improvements and investments made, running into millions of dollars, on submerged lands in reliance upon the fact that the waters were river and not lake, also produced a copy of the first number of the first volume of the Superior Chronicle, the first paper published in Superior, which was dated Tuesday morning, June 12, 1855, the article being entitled, "Entrance to the St. Louis River," and reading as follows:

> "The entrance to the St. Louis River has within the past week, been buoyed out by competent gentlemen, and for the information of captains of steamboats and sailing vessels engaged in the navigation of Lake Superior and its tributaries, we give below the positions of the buoys at the mouth of the river. The channel has been carefully sounded; and by observing the directions indicated, the ingress of vessels of not more than twelve feet draft, will be accomplished with ease and safety. The depth of the channel at the mouth of the river has increased since last season about four feet. To those who have been in the Bay of Superior, it is needless to discant upon its merits, and to those who have not we will only say that, as a harbor it has no equal on the lake. The following are the directions:
>
> "Boats entering the St. Louis River will find a buoy on the outer end of the harbor making out from Wisconsin Point; this buoy is in nine feet water on the extreme end of the point. The second buoy is in eight feet of water on the edge of the same bar, some three hundred yards from the first. The third buoy is on Minnesota Point, in nine feet water, leaving a channel 1200 feet in width and from 13 to 15 feet deep. As vessels make the other buoy they will pass to the starboard of it and steer for a target which has been placed on Wisconsin Point; they can approach to within 300 feet of the point, before making the turn for the St. Louis."[1]

This, then, is an account of the usage that fixed the meaning of the mouth of the St. Louis River, in the years that antedated

[1] Record, pp. 773–4.

the Enabling Act for the admission of Wisconsin, and in the interval that elapsed between this date and the act for the admission of Minnesota in 1857. In the interest of logical and orderly development of the subject, some illustrations have been cited of a usage that continued long after this date, whose origin, however, is referable to this interval in question; and from such usage we find that the certainty which surrounded the meaning and employment of the term, "mouth of the St. Louis River," in 1846, had been in no sense shaken or disturbed by intervening descriptions of township and boundary surveys completed; of roads authorized and in large part constructed; of lands reserved for military purposes and lighthouses begun thereon; of memorials and charters for the construction of railroads. The efflorescent applications for public aid, emanating from territorial legislatures, and the staid phrasing of federal statutes enacted in response to these prayers for governmental bounty, but served to make "assurance doubly sure." Such, indeed, was the cumulative volume of usage in the decade that elapsed between the two enabling acts that could Congress have been convicted of employing a wabbling ambiguity in the first instance, by 1857 practical construction would have made certain any element of doubt that might theretofore have lingered. It may be considered settled beyond question or peradventure that in the second, as well is in the first, of these enabling acts, Congress was fixing a boundary, one term of whose course ended at a point midway between Wisconsin and Minnesota Points, designated and understood by an unequivocal term, "the mouth of the St. Louis River."

The admission of the second of these two states with a common boundary line did not, as we have seen in the case of the lighthouse and military reservation, end the employment of this significant designation, "mouth of the St. Louis River." New occasion and new usage were stimulated in the field of the improvement and conservation of navigation by a governmental depart-

ment, whose activity and judgment has in large part laid the foundation for the present controversy.

h. The use of the term "Mouth of the St. Louis River" in connection with the survey of the northern and northwestern lakes.

The survey of the Northern and Northwestern Lakes was commenced in 1841,[1] and through intermediate stages others of the Great Lakes and other portions of Lake Superior had been mapped and charted, prior to the year 1861.

As early as 1859, the hero and commander of Gettysburg, General George G. Meade, who regretfully left his duties in this vicinity and the career of surveyor and scientist for which he conceived himself best adapted, to undertake active service in the Union Army, had made a general reconnoissance of Lake Superior in person,[2] and as presaging the care and spirit which we should have expected him to employ in his work, we find him laying stress upon the hazards and dangers encountered by—

> "a lake navigator. From the time of leaving to the time of his arrival, he is never out of the presence of danger, for he is either in the narrow and crooked channels of rivers, having to pass rapids and to cross flats, or he is among islands, surrounded by shoals and sunken rocks."[3]

And then again:

> "To such navigators, accurate charts, pointing out the dangers of the way, where dangers exist, and indicating the harbors and modes of entrance, to which resort may be had

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[1] Bulletin No. 26, Survey of Northern and Northwestern Lakes, published by U. S. Lake Survey Office, Detroit, Michigan, April 1917, p. 4.

[2] Ex. Docs., 1st Sess., 36th Cong., Vol. 2, 1859–60, p. 716.

[3] Id., p. 720.

in case of necessity, are of a value only to be fully realized by those who are thus exposed."[1]

During the next year, the importance of the survey of Lake Superior and its difficulties were again emphasized,[2] and Mr. Stuntz's employment as meteorological observer was noted.[3]

In his final report dated August 31, 1861, he details the instructions given by him to his various assistants:

> "Ass't D. F. Henry, together with Ass't E. B. Wright, • • • sent to the west end of Lake Superior, with directions to reconnoitre for a base line on Minnesota Point, mouth of St. Louis river, and a triangulation extending from this line down the lake. • • •
>
> Ass't Hearding, together with Ass't Casgrain, was directed to make a minute topographical and hydrographical survey of the river St. Louis, from Fond du Lac, the limit of navigation, to the mouth of the bay of St. Louis. • • •
>
> Ass't H. C. Penny, aided by Ass't H. Gilman, was directed to survey the north and south shores of Lake Superior, extending from the entrance to the bay of St. Louis."[4]

His successor, Lieutenant Colonel J. D. Graham stated that the duties assigned to Mr. Hearding and Assistant Casgrain were:

> "A topographical and hydrographical survey of the river St. Louis from its mouth in the extreme angle or head of Fond du Lac bay of Lake Superior to the head of navigation in said river, extending as far up as the village of Fond du Lac, which is forty-six miles, following the sinuosities of the river. • • •
>
> "The measurement of a base line 19,715 feet long on Minnesota Point, a narrow promontory extending between Fond du Lac and an estuary called the Bay of St. Louis, into which the river of that name empties."[5]

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[1] Id.
[2] Sen. Docs., 2nd Sess., 36th Cong., Vol. 2, 1860–61, pp. 312–3.
[3] Id., p. 354.
[4] Sen. Docs., 2nd Sess., 37th Cong., Vol. 2, 1861–62, p. 133.
[5] Id., p. 385.

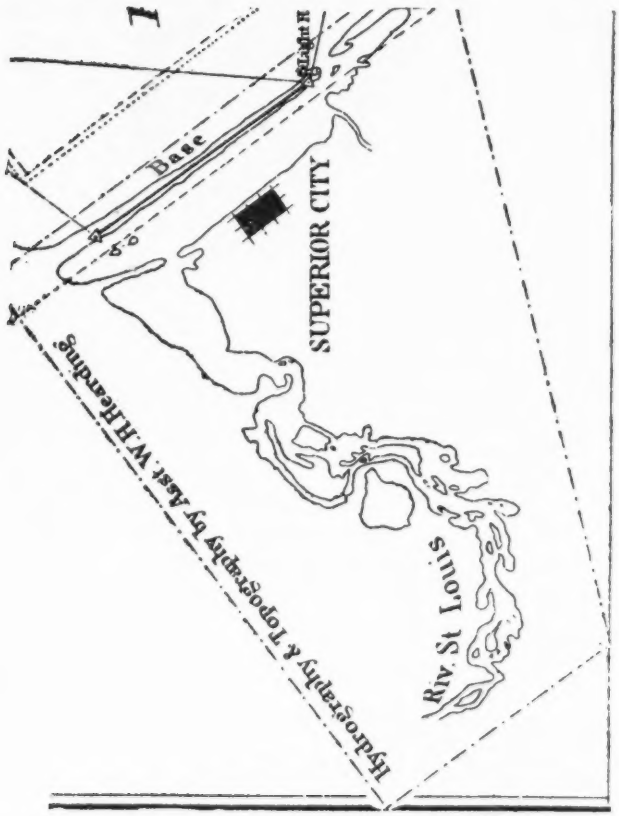
It is apparent that Captain Meade treated the mouth of the bay of St. Louis as synonymous with the mouth of the St. Louis River, and that his successor likewise so treated them. Captain Meade places Minnesota Point at the mouth of the St. Louis River, while Colonel Graham states that the mouth of the St. Louis River is "in the extreme angle or head of Fond du Lac bay."

If the exact areas covered by the different parties needed confirmation, the same would be found by reference to a map in the documents accompanying the President's Message for 1861,[1] of which a reproduction follows. This shows the base line on Minnesota Point, and also shows that the area mapped by Messrs. Hearding and Casgrain included all of the waters inside the Entry. The thoroughness with which the work was done appears from the report of Assistant Hearding, who states that in June, 1861, he proceeded with Assistant W. T. Casgrain and twenty men "to make a survey of the St. Louis river, at the west end of Lake Superior," where we are advised that "1,887 lines of sounding have been run," and "44,852 casts of the lead have been made." It also appears that on Monday, August 19, he "received a visit from Captain Geo. G. Meade, topographical engineers, and, upon finding that we should complete the survey of the St. Louis river sooner than he had expected," Assistant Hearding was ordered "to measure the base line for the main triangulation of the west end of Lake Superior, as soon as we had finished the work on the river."[2] The significance of the statement lies in the fact that Messrs. Hearding and Casgrain did all of the work that was undertaken inside Wisconsin and Minnesota Points, and the same is not characterized otherwise than as a survey of the St. Louis River.

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[1] President's Message, 2nd Session, 37th Congress, Maps, 1861–62, Ex. Doc. 1, Map 4.

[2] Senate Documents, 2d Session, 37th Congress, Vol. 2, 1861–62, p. 389.



Portion of Map accompanying Report of Gen. (then Capt.) Meade in 1861, taken from volume maps, 2d Sess., 37th Cong., 1861–62, Ex. Doc. 1, Map 4.

The text receives even fuller confirmation as to the understanding of this party of engineers as to the character of the waters in question, as a result of an examination of the map that was made following the survey. A certified copy of the original was introduced as Wisconsin Exhibit No. 46-C. This is denominated as "Sheet No. 1. St. Louis River, From its mouth in Superior Bay to the head of St. Louis Bay, Surveyed under the direction of Captain George G. Meade, T. E., Drawn under the direction of Lieut. Col. J. D. Graham, T. E., by W. H. Hearding assisted by W. T. Casgrain, 1861." Through the Entry and extending into the waters outside, we find the familiar legend, "Mouth of St. Louis River." On Minnesota Point, as well we find delineated the base line drawn pursuant to the "directions to reconnoitre for a base line on Minnesota Point, mouth of St. Louis river."

This was the last survey made of the waters in their natural condition. Another branch of the Department of Engineers, however, soon directed their attention to the question of making alterations, so as to better adapt them to the demands of a very increasing navigation and commerce.

In the report of the Chief of Engineers for 1865, it is stated:

> "two maps have been prepared from the field-notes published and issued to the navigators of the lakes. One gives the west end of Lake Superior."[1]

"The preliminary chart of the west end of Lake Superior, known as No. 3, for the use of navigators, was engraved" in 1870.[2] A copy of this chart was identified and introduced in evidence by witness James Bardon as Wisconsin's Exhibit 51, and here again we find the "Entry" referred to as the mouth of the St. Louis River.

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[1] Report of Sec'y of War, 1st Sess., 39th Congress, Part 2, 1865–66, p. 919.

[2] Report of Sec'y of War, 3d Sess., 41st Congress, Vol. 2, 1870–71, p. 86.

i. History of the improvements of the Duluth–Superior harbor as illustrating the use of the terms, "Mouth of St. Louis River" and "St. Louis River."

(a) Usage from 1866 to 1871.

The first step looking to the improvement of the Superior Harbor was taken by Congress in 1866. Chapter 138 of the laws of that year contained the provisions:

> "That the Secretary of War is hereby directed to cause examinations or surveys, or both * * * to be made * * * at Superior City."[1]

In response to this provision, a report was made by Colonel W. F. Raynolds, dated October 11, 1866, which advised his superior that—

> "Superior bay is only an expansion of St. Louis river, near its mouth, the channel of the river being distinctly defined through its entire length. * * *
>
> "The outlet of Superior bay, or, more properly, the mouth of St. Louis river, is eight hundred feet wide."[2]

A substantial repetition of this language is found in the report transmitted by the Chief of Engineers to the Secretary of War, who in turn transmitted the same to the House of Representatives.[3]

Following the recommendation of the engineer in charge, Congress made provision in 1867—

> "For improving harbor at Superior City, Wisconsin, sixty-three thousand dollars."[4]

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[1] U. S. Stat. L., Vol. 14, 1865–67, ch. 138, p. 74.

[2] Executive Documents, 2nd Sess., 39th Congress, 1866–67, Doc. No. 56, part 2, p. 88.

[3] Id., Doc. No. 56, p. 10.

[4] U. S. Stat. L., Vol. 14, 1865–67, ch. 144, p. 419.

The next report was made August 31, 1867. It is there stated:

> "The bay of Superior is the second widening of the St. Louis river, the first being the St. Louis bay above."[1]

And after proposing "to restore a former channel of the St. Louis river by cutting across Minnesota Point about one and one-fourth mile northwest of the light-house," (this being the lighthouse which we have already seen was built on the military reservation at the mouth of the St. Louis River, and was referred to as the "lighthouse at the mouth of the St. Louis River" and as the "St. Louis River lighthouse") he states that the—

> "owners of property on the bay near the Nemadjii river claim to foresee damage to their property by changing the natural outlet of the St. Louis river."[2]

In the report of 1868, the Chief of Engineers described the plan as being one "to narrow gradually the present outlet of the bay to about the width of the river, say 350 feet,"[3] while his subordinate reported again:

> "The channel of the St. Louis river runs diagonally, and nearly in a straight line across the bay from the mouth of the Bay of St. Louis to the harbor entry, which is the proper mouth of the St. Louis river. This channel has a width of about 300 feet and a depth from 14 to 30 feet. In all other parts the bay is shoal, and will require dredging to make it available for navigation by vessels drawing more than eight feet of water."[4]

And here we have a first recognition of the political significance of the locality, it being stated:

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[1] Report of Secretary of War, 2nd Session, 40th Congress, Vol. 2, 1867–68, Executive Document 1, p. 60.

[2] Id., p. 61.

[3] Report of Secretary of War, 3d Sess., 40th Congress, Vol. 2, 1868–69, p. 26.

[4] Id., p. 80.

"The location of the improvement which has been adopted is at the harbor entry or outlet of the bay of Superior, which divides Minnesota Point from Wisconsin Point, being the State line."[1]

The report for 1869 notes the exhaustion of previous appropriations,[2] and calls attention to the survey of the harbor of Du luth, Lake Superior.[3]

The report for 1870 describes work at the Entry,[4] and likewise contains the report of the engineer detailed for that purpose on the harbor of Duluth, Minnesota, which directs attention to the fact that the St. Louis river belongs "jointly to the two states of Wisconsin and Minnesota."[5] More significant for our purpose is the report of the Board of Engineers, which met January 20, 1870 to consider the question of improving this harbor. It is stated by them, among other things

"The only natural harbor in this part of the lake, west of the Apostle Islands, is that afforded by the St. Louis River, which debouches at the lower end of Minnesota Point, about seven miles from the village of Duluth; and for this the General Government has already adopted a plan of improvement, and progressed therewith to the extent of making the mouth of the river valuable as a harbor."

And for reasons assigned, the board recommends:

"the completion of the improvements of the entry to Superior Bay or mouth of the St. Louis River."[6]

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[1] Report of Sec'y. of War, 3d Sess., 40th Congress, Vol. 2, 1868–69, p. 81.

[2] Report of Sec'y. of War, 2nd Sess., 41st Congress, Vol. 2, 1869–70, Report of Chief of Engineers, p. 23.

[3] Id., p. 29.

[4] Report of Sec'y. of War, 3d Sess., 41st Congress, Vol. 2, 1870–71, Report of Chief of Engineers, p. 89.

[5] Id., p. 112.

[6] Id., p. 125.

(b) Affidavits and testimony of Major D. C. Houston, witness relied upon by Minnesota.

The report for 1871 indicated that Major D. C. Houston was in charge of the work at the two harbors of Duluth and Superior, and inasmuch as counsel for Minnesota placed much stress upon his definition of the location of the mouth of the river and have introduced into evidence a portion of his testimony in litigation which then arose, we may profitably turn aside to consider his views, as copiously set forth in his annual report.[1] It appears that the city of Duluth had not accepted as final the determination of the Board of Engineers to which we have referred, but had taken the initiative of cutting the canal across the base of Minnesota Point herself. As a result of this action suit was instituted in the district court by the Government of the United States, and the entire subject was presented to Congress pursuant to resolutions, in the form of a report from the Secretary of War,[2] and likewise a report of the Solicitor General and Acting Attorney General, relative to the proceedings taken in court.[3] In the latter document appears an affidavit of Major Houston, in which, so far from placing the mouth of the river at Big Island, he speaks of "the improvement being made by the Government at the mouth of the Saint Louis river, near Duluth,"[4] here clearly having reference to the "Entry," where the Government work was being done, as the mouth of the St. Louis River. Further on, he says: "that the nearer the

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[1] Report of Sec'y. of War, Chief of Engineers Report, 2nd Session, 42nd Congress, Vol. 2, 1871–72, p. 107.

[2] Senate Documents, 2nd Sess., 42nd Congress, 1871–72, Doc. 60.

[3] Id., Doc. 76.

[4] Id., Doc. 76, p. 43. The same affidavit appears at p. 40.

cut or canal is to the mouth of the Saint Louis River."[1] This we regard as ambiguous, the context indicating that he may have here referred to the opening between Rice's Point and Connor's Point as the mouth of the river. It appears that he wrote a letter to the Governor of Wisconsin, which is reproduced and sworn to by him, where the same confusion appears. In discussing the effect of the Duluth canal, he states:

> "If this velocity is reduced beyond a certain limit, the channel at the mouth will be barred up by the action of the lake."[2]

At the close of the letter, however, he states that the distance from the present mouth of the St. Louis River to the proposed canal is about two miles,"[3] indicating that he placed it between Rice's Point and Connor's Point.

These proceedings in the district court were dismissed upon giving a bond for $100,000, but the controversy was not ended until an original action was instituted in this court by the State of Wisconsin against the City of Duluth,[4] and it is from his deposition in this action that the portion of Major Houston's testimony upon which such great stress has been laid was introduced.[5] And it is for this reason that we respectfully refer this court to its own record. It is there found that after the phrasing of the Wisconsin Enabling Act was read to Major Houston, he said:

> "A. I understand the meaning of the act to be that it goes through the natural entry.
>
> "Q. Would it go through the natural entry because that was the mouth of the S't. Louis River?

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[1] Senate Documents, 2nd Sess., 42d Congress, 1871–72, Doc, 76, p. 43.

[2] Id., p. 44.

[3] Id.

[4] 96 U. S. 379.

[5] Record pp. 379, 380–1; Minnesota brief, p. 80.

"Q. That probably was the idea in framing the act, that that was considered the mouth of the St. Louis River, geographically speaking; it probably was not intended to mean the mouth in an engineering sense.

"Q. Is the natural entry, accurately and as ordinarily understood in the use of language, the mouth of the S't. Louis River?

"A. It would be in the popular sense, I think.

"Q. I do not ask what was the probable intention of Congress in establishing the boundary-line between the State of Wisconsin and Minnesota, but I ask where, according to the description given in the act of Congress is incorporated in the previous question, that boundary-line really is, if you were called upon as an engineer to locate it.

"A. If I had been called upon as an engineer to locate it at that time, I should have located it through the natural entry and through the Bay of Superior to the channel of the S't. Louis River."[1]

Returning to the Senate Document in question, we find the phraseology of the Legal Department of the Government stating—

"That the Saint Louis River, which is a part of the boundary between the State of Wisconsin and the State of Minnesota, the waters of which flow into Lake Superior at the city of Superior, • • • is navigable for about twenty miles above its outlet."[2]

And throughout the bill we find the terms, "outlet," and "mouth of the river" used interchangeably. The affidavit of Richard Relf, who prepared the so-called Bardon map,[3] refers to the "Entry,"—

"or more properly the mouth of the Saint Louis River, • • • Said 'mouth' is formed by two lateral spits of land projecting from the Minnesota and Wisconsin shores

[1] State of Wisconsin v. City of Duluth & N. P. R. Co., Extract from transcript of record, p. 435, 436.

[2] Sen. Docs., 2nd Sess., 42d Congress, 1871–72, Doc. 76, p. 30.

[3] Minnesota Exhibits 2, 24, 27.

of the land, and known, as Minnesota and Wisconsin Points."[1]

Peter Bradshaw, a civil engineer and resident of Superior since 1857, states:

"the bay of Superior * * * has one outlet only, to wit, the mouth of the Saint Louis River."[2]

Thomas Clark, a civil engineer and resident in the vicinity from 1854, made affidavit to—

"surveys in said county, and in the State of Minnesota, from Lake Superior up the Saint Louis River, to the distance of twenty miles or more; has measured and surveyed that portion of said river, from its entry into the lake aforesaid * * * that at the distance of about five miles above said entry said river passes between Rice's Point * * * and Conner's Point."[3]

The echoes of this controversy appear in the reports for a number of years following. In 1873 Major Houston quotes from a report made by Mr. Newton, who had represented the state of Wisconsin, in which are noted—

"changes of the current flowing through the mouth of the Saint Louis River, depriving the mouth of the river of its reservoir head of one foot."[4]

the reference being to the natural entry. The next year, he notes a careful series of observations of "water levels at the canal entry, the mouth of the Saint Louis and Nemadjii Rivers,"[5]

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[1] Senate Documents, 2nd Sess., 42d Congress, 1871–72, Doc. 76, p. 34.

[2] Id., p. 35.

[3] Id., p. 37.

[4] Ex. Documents, No. 92 to 150, 3d Sess., 42d Congress, 1872–73, Doc. No. 144, p. 10.

[5] Report of the Sec'y of War, Chief of Engineers Report, 3d Sess., 42d Congress, Vol. 2, 1872–73, p. 105.

the context indicating that he used the term as synonymous with the "Entry."

(c) Usage from 1871 to 1879.

From 1873 to 1879 the reports contain nothing of significance. Congress in 1879, however, ordered a survey to determine the best plan of harbor improvement.[1] This resulted in an interesting historical sketch of the Government improvements in the harbors by the assistant engineer in charge, in which it is stated in language decisive of this branch of our controversy:

> "The channel of the Saint Louis River forms, for a distance of some 20 miles from the entry, the boundary line between the States of Minnesota and Wisconsin."[2]

Reference is also made to the report of the Board of Engineers, already noted in 1870, which had advocated the completion of the improvement of the entry to Superior Bay, or the mouth of the St. Louis River.[3] The results of the survey were presented by the engineer in charge to the Senate as a special report, and the superior officer indulges in a variety of usage, in that he states:

> "The distance from the mouth of the Saint Louis River to the mouth of the canal is 11,900 feet, while to the mouth of the Entry it is 27,000 feet."[4]

And he likewise suggests the possibility of a canal on "Minnesota Point at a point directly opposite the mouth of the Saint Louis

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[1] Ch. 181, 3d Sess., 45th Congress, 1879. Vol. 20, U. S. Stat. L., p. 363, 374.

[2] Report of the Chief of Engineers, Part II, 1879, p. 1471.

[3] Report of Chief of Engineers, Part II, 1879, p. 1472.

[4] Senate Documents, 2d Sess., 46th Congress, Vol. 4, 1879–80, Doc. 153, p. 3.

River."[1] For the purposes of this discussion, the mouth of the river was treated as lying between Rice's and Connor's Points.

From this point on, further separate reference to the reports of the engineers, as establishing the character of the waters in controversy as a river rather than as a portion of the lake, apart from their discussion and description of channels of and in the St. Louis River, will be omitted. We shall find them increasingly concerned with the discussion of the existence and improvement of channels of the St. Louis River, and inasmuch as a river channel cannot exist in the absence of a river, we deem it an unnecessary cumulation to list illustration and usage apart from the discussion of the question of the location of the channel, and for further proof make reference to the portion of the brief following devoted to that subject.

j. Congressional understanding as to terminus of St. Louis River as evidenced by statutes for construction of bridges over the river.

Inasmuch as the navigable waters, whose character we are seeking to establish, could only be bridged by Congressional permission, we find frequent expression of Congressional understanding of their character. The earliest provision appears to have been made in 1873, when the Northern Pacific Railroad Company was—

> "authorized to construct and maintain a drawbridge across the Saint Louis river between Rice's point, in the State of Minnesota, and Connor's point, in the State of Wisconsin."[2]

As a preliminary condition, a map was required,

> "giving, for the space of at least one mile above and one mile below the proposed location, the topography of the

[1] Id., p. 4.

[2] Ch. 207, 3d Sess., 42d Congress, 1873, Vol. 17, U. S. Stat. L., 1871–73, p. 477.

banks of the river * * * the direction of the current * * * and the soundings accurately showing the bed of the stream."[1]

As a result, perhaps, of the making of such map, the President of the Railroad addressed a communication to the Secretary of War under date of April 9, 1884, calling attention to the fact that the corporation was authorized to construct a bridge across the St. Louis River at the point mentioned, citing a provision of the act which provided for piers "built parallel with the current at that stage of the river," stating the desire of the company "to proceed with the construction of the bridge across the Saint Louis River," but expressing the view that it was—

"inadvisable to build it between Rice's Point and the extreme north end of Connor's Point, for the following reasons:

"*First.* The channel of the Saint Louis River runs at an acute angle to the line from Rice's to Connor's Point."[2]

In the report of the Chief of Engineers for 1885, there is incorporated a letter to Major Allen, under date of October 2, 1884, in which reference is made to the purchase of ground by the St. Paul and Duluth Railroad, "which will be improved and made use of as soon as the Saint Louis River Bridge is completed." And as to the Northern Pacific Railroad Company, the purchase of land by them is likewise noted, and "improvements on this land will be commenced on completion of the bridge over Saint Louis River, being constructed by that company."[3] And in a letter from Mr. James Bardon to Major Allen, under date of May 15, 1885, the statement is made that—

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[1] Id., p. 478.

[2] House Executive Documents, 1st Sess., 49th Cong., 1885–86, Vol. 5, p. 1925.

[3] Annual Report, Chief of Engineers, Pt. III, 1885, p. 1965; House Ex. Documents, 1st Sess., 49th Congress, 1885–86, Vol. 5, p. 1965.

"The railroad bridge constructed across the Saint Louis River the past winter starts from the Wisconsin shore at West Superior."[1]

In 1887 the St. Paul and Duluth Railroad Company was authorized

> "to construct and maintain a bridge, and approaches thereto, over the Saint Louis River, between the States of Minnesota and Wisconsin, at the most feasible point in the State of Minnesota in section seventeen, town forty-nine north, of range fourteen west, to a point opposite in the State of Wisconsin in section seventeen, town forty-nine north, of range fourteen west."[2]

As a preliminary requirement, "a detailed map of the river * * * for a distance of a mile above and below the site" was called for, the bridge itself to be constructed "with a draw over the main channel of the river."[3]

The court will of course recognize that this provided for the construction of a bridge from Grassy Point to a location opposite in the state of Wisconsin.

Under date of April 19, 1890, after amending the same, the Senate passed a bill authorizing the Lake Superior and Pacific Railroad Company—

> "to construct and maintain a bridge, and approaches thereto, over the St. Louis River, between the States of Minnesota and Wisconsin, at such point in the State of Minnesota, in section 20, township 49 north, of range 14 west, as may be approved by the Secretary of War, to a point opposite in the State of Wisconsin."[4]

A motion for reconsideration was made, and the action subsequently rescinded. This involved the extremity of Grassy

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[1] Id., p. 1948.

[2] Ch. 15, (Jan. 3, 1887), 2nd Sess., 49th Cong., Vol. 24, U. S. Stat. L., p. 356.

[3] Id.

[4] Congressional Record, Vol. 21, Pt. 4, p. 3541.

Point (section 20, township 49 north, range 14 west), as may be seen by reference to Minnesota's Exhibit 15.

In 1894, provision was made in express terms for a bridge across the river from Grassy Point, by—

> "An Act To authorize the Saint Louis River Bridge Company and the Duluth Transfer Railway Company to construct, maintain, and operate a bridge over the Saint Louis River from a point at or near Grassy Point, in the village of West Duluth, Minnesota, to the most available point opposite, in the State of Wisconsin." [1]

Early in the same year, the Duluth and Superior Bridge Company was authorized—

> "to construct * * * a bridge * * * over the Saint Louis River * * * from the northerly end of Conners Point, Wisconsin, to Rices Point." [2]

with a provision for a "draw over the main channel of the river." [3]

At the same session, an act was adopted "To amend an Act to authorize the construction of a steel bridge over the Saint Louis River, between the States of Minnesota and Wisconsin." [4] Preliminary to the adoption of this statute, reports had been presented to House and Senate,[5] discussing the propositions as projects for bridging the river, which involved the use of the term, "the river," in describing the location of the bridges, both at Connor's Point and at Grassy Point.

The Chief of Engineers, in his annual report for 1895, made note of the "Bridge of the Duluth and Superior Bridge Com-

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[1] Ch. 67, Vol. 28, U. S. Stat. L., (May 1, 1894), 68.
[2] Ch. 64, Vol. 28, U. S. Stat. L., p. 64.
[3] Id., 65.
[4] Ch. 212, Vol. 28, U. S. Stat. L., p. 228.
[5] Senate Reports, 2d Sess., 53d Cong., 1893–94, Vol. 5, Report No. 336.
House Reports, 2d Sess., 53d Cong., 1893–94, Vol. 2, Doc. No. 488.

pany across St. Louis River between Connors Point, Wisconsin, and Rices Point, Minnesota," and as thus authorized and amended, notes the approval of the plans by the Secretary of War, April 10, 1895.[1] He notes also the "Bridge of the street railroad companies of Duluth, Minn., and Superior, Wis., across St. Louis River between Rices and Connors points."[2]

In 1897, the time for the completion of the Grassy Point bridge was extended, and again, we have "An Act To amend an Act entitled 'An Act to authorize the construction of a steel bridge over the St. Louis River.'"[3]

k. Construction placed upon term "Mouth of St. Louis River" by legislatures of Wisconsin and Minnesota and city councils of Duluth and Superior.

The boundaries of these rival cities which face each other across the water required definition by the legislatures of the respective states, made doubtless pursuant to application by the leaders of the two communities which aspired to municipal incorporation. Turning to the charters of Duluth and Superior, we find successive illustrations of how these state and local legislative bodies understood the sense in which Congress employed the term, "mouth of St. Louis River."

We are indebted to the Record for a copy of a portion of the boundaries of Duluth, as fixed in 1881. After tracing their course to Second Street West, the charter reads:

> "thence southwesterly along said last named street to the line between sections four (4) and five (5) township forty-nine (49) north of range fourteen (14) west, thence south to the state line between the states of Wisconsin and Min-

[1] House Documents, Vol. 4, Report of Secretary of War, Vol. 2, Pt. 1, Engineers, 54th Cong., 1st Sess., 1895–96, p. 475.
[2] Id., p. 477.
[3] Ch. 6, (1897) Vol. 30, U. S. Stat. L. p. 104.

nesota, thence along said State line to the mouth of the St. Louis River."[1]

The significance of this description lies in the fact that the line between sections four and five prolonged, as the court will see by reference to Minnesota's Exhibit 15, runs into the water between Rice's Point and Grassy Point, nearer to Rice's Point than to the latter, and many miles nearer to Lake Superior than the location of the mouth of the St. Louis River, according to Minnesota's present contention. And yet, the description proceeds from this point to the mouth of the St. Louis River.

While reference to the original act seems to indicate a description conforming to that of 1881, as certified in Wisconsin's Exhibit 21, the description of 1887 and 1889 is even more definite in its course, proceeding:

"south to the northwest corner of lot two (2), section five (5) township forty-nine (49) north, range fourteen (14) west thence east to the shore of Saint Louis Bay; thence southwesterly to the state line in the bay of Saint Louis between Minnesota and Wisconsin; thence along the state line to the mouth of Saint Louis River at the natural entry of the Bay of Superior, (between) Minnesota and Wisconsin Points."[2]

Referring again to Exhibit 15, we find this boundary leads into the water adjacent to Rice's Point as well, but the description itself industriously defined and located the mouth of the St. Louis River at the natural entry of the Bay of Superior, between Minnesota and Wisconsin Points.

The charter adopted in 1900 adheres to the same usage and meaning. The concluding portion of this description reads:

"thence south on the range line between township forty-eight (48) north of range fifteen (15) west and township forty-eight (48) north of range sixteen (16) west, to the

[1] Wisconsin Exhibit 20; Record p. 442, pp. 1059–60; Ch. 11, Laws of Minnesota, 1881.

[2] Record p. 442, pp. 1061–62; Ch. 2, Special Laws of Minnesota, 1887, p. 57.

center line of the channel of the St. Louis River; thence along the center line of the channel of the St. Louis River; thence along the center line of the channel of said river to the state boundary line between the States of Minnesota and Wisconsin, thence along said state Boundary line to the mouth of the St. Louis River at the entry of the Bay of Superior between Minnesota and Wisconsin Points."[1]

Reference to Minnesota Exhibit 13, or any of the sectional maps, indicates that the line between ranges 15 and 16 intersects the channel of the St. Louis River a quarter-section westerly of the north and south boundary line between the states of Minnesota and Wisconsin, which accounts for that portion of the course, "along the center line of the channel of said river to the state boundary line."

The electors in 1912, adopting a new charter for Duluth, again located "the mouth of the St. Louis River at the entry of the Bay of Superior, between Minnesota and Wisconsin points."[2]

A similar process of definition was meantime going on in Wisconsin.

The legislature of Wisconsin in 1889 traced the boundaries of Superior, coinciding in its point of view, as to the location of the mouth of the St. Louis River, with the parallel views exemplified by the legislature of Minnesota.

> "following said state line down the river St. Louis and through St. Louis Bay and through the bay of Superior to the mouth of the St. Louis River, between Minnesota and Wisconsin Points."[3]

Two years later, the legislature reemployed the phrasing, "the

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[1] Wis. Ex. 22; Record p. 442, pp. 1063–64; Charter adopted by the electors of Duluth Feb. 6, 1900.

[2] Wis. Ex. 23; Record p. 442, pp. 1065–66. Charter adopted by the electors of the city of Duluth on Dec. 3, 1912.

[3] Record, p. 442, 443, Ch. 152, Laws of Wis., 1889.

mouth of the St. Louis River, between Minnesota and Wisconsin Points."[1]

1. Illustrations evidencing judicial understanding as to meaning of "Mouth of St. Louis River" and "St. Louis River."

(a) Supreme Court of United States.

We do not find that the definitions by the authorities of these two states have been confined to the action of legislatures and the adoption of city charters. The legal department of the state of Wisconsin instituted an original action in this court by bill in equity, December 4, 1874, and in its pleadings treated the mouth of the St. Louis River throughout as located between Wisconsin and Minnesota Points. At that time the exigencies of the litigation were such that the defendant City of Duluth, which has sought apparently to carry the mouth of the St. Louis River further and further up stream, by its verified answer set out—

> "that the bay of Superior in the bill of complaint mentioned is and always has been an integral part or portion of Lake Superior; that the outlet or mouth of the St. Louis River into Lake Superior is at a place between Connor's Point so called in the State of Wisconsin and Rice's Point so called in the State of Minnesota."[2]

The opinion of the court itself, while expressly declaring—

> "Whether these bays are considered as parts of Lake Superior, or as mere expansions of the river, is in our view immaterial,"[3]

when it came to the discussion of the evidence employed the

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[1] Record, p. 443, Ch. 124, Laws of Wis., 1891.

[2] Record, p. 10, in original action, State of Wisconsin v. City of Duluth & N. P. R. Co., Files of Supreme Court.

[3] *Wis. v. Duluth*, 96 U. S. 379, 380.

phrase as it has been most uniformly used since the passage of the Enabling Act. It states:

> "the greatest depth at the mouth of the St. Louis River was ten and twelve feet."[1]

And that the Government had been at work—

> "to deepen the channel at the mouth of the St. Louis River."[2]

And again:

> "at the original entrance, as it is aptly called, at the mouth of the river."[3]

The court expressly recognizes, we think, that the waters in question are river, at least to Grassy Point, because it is said:

> "West of Minnesota Point is a body of water lying parallel to it, and averaging a mile and a half or two miles in width, called Superior Bay, and still west of that a similar body, called St. Louis Bay. Into this latter empties the St. Louis River, draining a large area of country west of the lake, and discharging the water thus collected into the lake."[4]

Inasmuch as at that time there had been no general map of the river prepared except the Meade map, and upon the Meade map,[5] St. Louis Bay extends only to Grassy Point, we think this is tantamount to a declaration or recognition that the St. Louis River discharged itself at Grassy Point. If it be assumed that this was the view of the Supreme Court, it conforms to the judgment of the Supreme Court of the State of Minnesota as well.

In *Norton v. Whiteside*, 239 U. S. 144, 155, while the court declined to pass upon the character of the waters, note is made

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[1] Id., 381.
[2] Id., 384.
[3] Id., 386.
[4] *Wis. v. Duluth*, 96 U. S. 379–380.
[5] See Wisconsin's Exhibit 46–C.

of the fact that both the courts below held them "a mere continuation of the St. Louis River."

(b) Federal District Court.

The district judge held, in *Norton v. Whiteside*, 188 Fed. 356, 358:

> "I would feel obliged to find that the St. Louis river extends to what is commonly known as the 'Wisconsin entry,' between Minnesota Point and Wisconsin Point, and that its mouth is there."

(c) Circuit Court of Appeals.

The circuit court of appeals said, in *Whiteside v. Norton*, 205 Fed. 5, 8:

> "It is conceded that the St. Louis river flows into Lake Superior at some point. That point is its mouth, and was so well defined to the legislative eye that it was referred to as a natural monument in describing the boundary of the new state. From the exhibits presented, the entry between Minnesota point and Wisconsin point conforms most logically to this description."

(d) Supreme Court of Minnesota.

Gridley v. N. P. Ry. Co., 111 Minn. 281, decided June 24, 1910, as appears from the opinion of the court, involved a tract of land in the so-called Minnewakan Addition to Duluth, which addition, as appears from Minnesota Exhibit 11, is located across the water to the west of Clough Island, or Big Island. The deed in controversy shows also that it refers to Lots 2 and 3, in section 26, T. 49, R. 15, in St. Louis county. Any of the town and range maps introduced in evidence on either side assist in locating this land on the shore of the water westerly of Big Island. It is therefore significant of the understanding and attitude of the Minnesota court that it should have referred to the

same, as a "tract of land bordering on the St. Louis river,"[1] and in a head note as "an unplatted tract of land bordering on the river St. Louis,"[2] which would seem to be a clear judicial recognition that the court of Minnesota had not considered that the mouth of the St. Louis River was located to the south of Big Island. And if the water in question is a river opposite Minnewakan Addition, then it must continue to be a river down at least to the extremity of Grassy Point, as there is no logical intermediate stopping point.

(c) Supreme Court of Wisconsin.

And finally, we come to the conclusion of the Supreme Court of Wisconsin, which we believe this court must make its own. After the consideration of evidence whose character, as contrasted with that now before this court, might be characterized as inconclusive and fragmentary, it says, speaking of Minnesota Point and Wisconsin Point:

Bright v. Superior, 163 Wis. 1, 12–13.

> "Their ends are separated by a 500-foot channel locally known as the Superior entry. This channel is and has always been recognized as the mouth of the St. Louis river, and through it (though now deepened and enlarged by dredging) the waters of that river have always been discharged into Lake Superior. The proof is plenary and convincing that this channel has been recognized by the national and state governments and by the people generally as the mouth of the St. Louis river from a very early period. In the map made by J. N. Nicollet (which is part of a report covering explorations and hydrographical surveys made under the authority of the United States War Department in the years 1836 to 1839, published in 1843 as part of Senate Document No. 237, second session of the 26th Congress) the body of water in question is plainly represented as a part of the river and the words 'Fond du Lac Superior' *(bottom*

[1] *Gridley v. N. P. Ry. Co.*, 111 Minn. 281, 283.
[2] Id., 281.

or farthest part of Lake Superior) appear just outside of the above described channel or entrance, printed upon the space representing the body of the lake. Following this comes the direct governmental recognition and adoption of this map in the Wisconsin enabling act of 1846. In this act the boundaries of the proposed state are specifically traced and at this point are given as follows: 'thence through the center of Lake Superior to the mouth of the St. Louis river; thence up the main channel of said river to the first rapids in the same, above the Indian village, *according to Nicollet's map.* The same boundary line is given in the constitution of Wisconsin (art. II, sec. 1), and the enabling act for Minnesota, passed in 1859, recognizes and adopts the same line. The government survey was made in 1853, and the field-notes show that the aforesaid channel between Minnesota and Wisconsin Points was recognized by the surveyors in fixing their meander lines as the mouth of the St. Louis river. A lithographed map of the new city, published in 1856 by the proprietors of the plat, while designating the body of water as the Bay of Superior, bears also the words 'St. Louis river' printed upon a part of the center portion of the so-called bay where the channel would naturally be. In a chart of Lake Superior published by the United States War Department in 1870, the mouth of the aforesaid channel is designated as the mouth of the St. Louis river.

"It is true that the body of water in question is frequently called the Bay of Superior both on maps and in public speech, but we regard this as very natural and entirely inconclusive. As matter of fact there always was a channel in the central part of this so-called bay through which the waters of the river always moved towards the lake; that the river is continuous from its source to its entrance into Lake Superior through the channel aforesaid and has always been so considered, seems to our minds well proven."

II.

THE MAIN CHANNEL OF THE ST. LOUIS RIVER, AS FIXED BY CONGRESS IN 1846, RAN ADJACENT TO THE MINNESOTA SHORE, BEING IDENTICAL WITH THE SO-CALLED MILFORD CHANNEL, WHOSE MIDDLE LINE THEN BECAME AND HAS SINCE REMAINED THE BOUNDARY BETWEEN WISCONSIN AND MINNESOTA.

It is settled then that the mouth of the St. Louis River, as fixed in 1846, terminated a rigid and not a collapsible line. Congress selected not a fluctuating landmark, but a permanent natural monument. Its choice was not a flitting point that moved like a will-of-the-wisp from the "Entry" to hover over the "Gate," between Rice's and Connor's Points in 1874; to linger then at Grassy Point, as it did in the minds of witnesses McManus and Darling, and pause now momentarily at the division of the channels above Big Island, and perhaps at some future time to proceed to a final resting place at the first falls near Fond du Lac, where the beginning and the end of the line would then coincide. This phrase, in the description of the boundary, did not vary in meaning and significance, as the consensus of individual opinion; the mental vagaries of a sufficient number of witnesses; the changing interest of the rival cities, or the exigencies of successive lawsuits might determine.

1. *Problem before court to determine state line fixed in 1846.*

But it was not merely the extremities of the line that were thus permanenty located, but all points between—the course of the line itself was then decided on once and for all, subject only to such lateral creeping as erosion or accretion might bring about. The exact middle line of the channel selected

may have shifted, but the identity of the channel from then to now has never changed. 1846 marked the conclusion, not the opening of debate upon the choice of channels. Doubt and uncertainty as to the location of the boundary were sought to be ended, not initiated. The line was drawn between a series of definite points, definitely ascertainable and susceptible of physical location in 1846. Their ascertainment and determination was in no sense dependent or contingent upon what men might do at any subsequent time. Had any question of criminal jurisdiction or taxation, or any other question properly involving the boundary, arisen, it could have and would have been and must now be, determined upon the basis of then existing conditions.

The object of the present inquiry, as must be apparent, is not to fix the boundary between Wisconsin and Minnesota, but by such competent, relevant evidence as may be obtained, to ascertain where Congress fixed it in 1846. An uninterrupted current of decisions establishes this rule.

a. Law stated.

Moore & M'Ferrin vs. M'Guire, 142 Fed. 787 at 792

> "The well settled rule is that the boundaries of a state must be determined by what they were at the time of its admission. * * *."

In *Missouri v. Kentucky*, 11 Wall., 395, the court, discussing the boundary between those states and the claims of one route presented, said at 404:

> "now it is the main highway for the business of the river; but the point to be determined is, was it so as far back as 1763, or even 1820?"

Indiana vs. Kentucky, 136 U. S. 479, 508.

In *Moore v. McGuire*, 205 U. S. 214, 219, the court assumed the boundary to be "the middle of the main channel as it was in 1817," the year of the admission of Mississippi.

Arkansas v. Tennessee, 246 U. S. 158, p. 177.

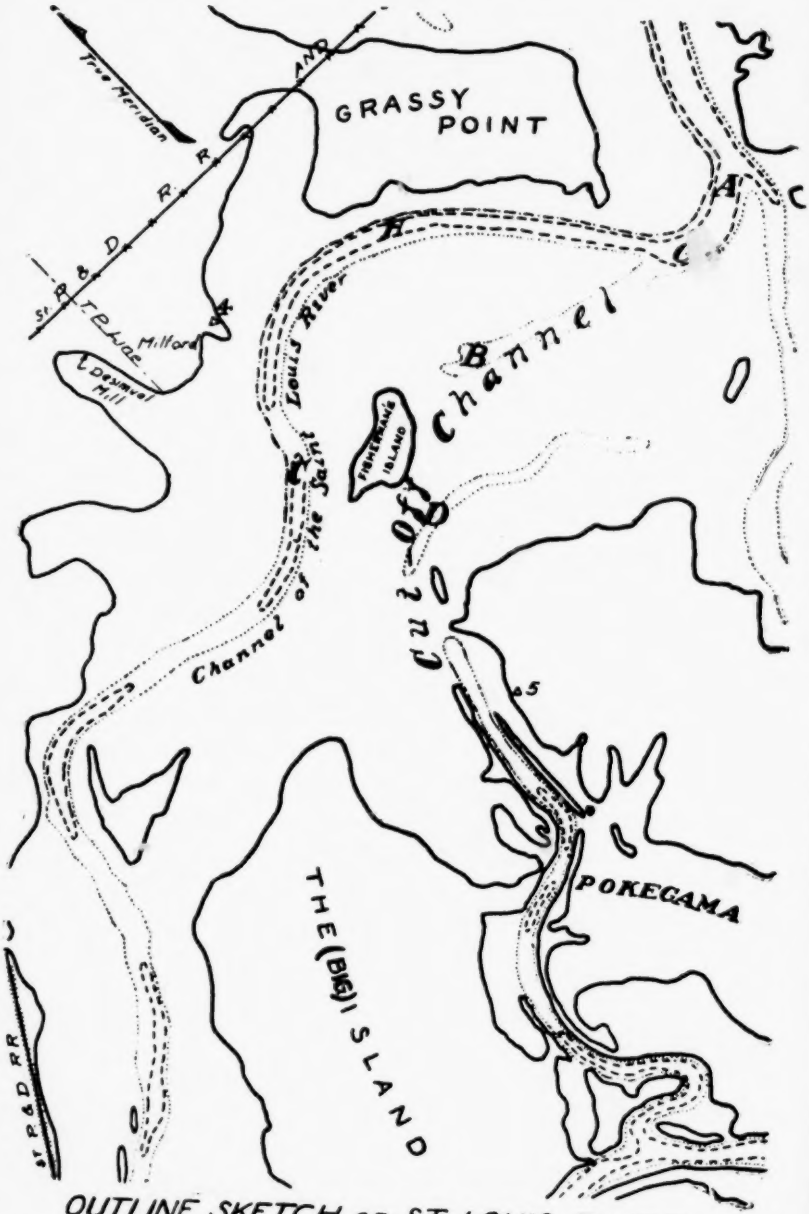
Such, indeed, we understand to be the position of counsel for Minnesota, as they speak of "the state line that had been located upon the 'main channel of Commerce' at the time that the State of Wisconsin was admitted into the Union."[1]

b. Outline of physical situation.

To place before the court in as simple and concise a fashion as accuracy permits, the undisputed aspects of the area with which we are most acutely concerned, as well as the rival claims of the contending states, we present on page 132 a simple outline sketch. This drawing is based upon a map of the Department of Engineers elsewhere more fully reproduced, which has been divested of all confusing detail. Referring now to undisputed factors, as appears from many maps introduced in evidence, some of which have been elsewhere reproduced, the St. Louis River, proceeding on its course to Lake Superior, is divided into two channels by Big Island as commonly called. This appears at the foot of the sketch, and is designated as "The Island." These two channels continue without dispute in the same general direction until they come abreast of a second island, referred to by witnesses by a great diversity of names, among which are Fisherman's, Pie, Pancake, Snowshoe, Armstrong, Shoepack, and Grassy Island. The waters which found their course to the east of the island were sometimes referred to as the east channel of the St. Louis River,[2] but were more commonly spoken of as the cut-off channel, the upper portion of its course being represented and described upon Minnesota Exhibits 1 and 3, and upon the sketch, by the letters A–G–B–D. The township and boundary surveys by practical construction four years prior to the admission of Minnesota, and six years

[1] Minnesota brief, p. 205.

[2] Field Notes, George R. Stuntz, R. p. 1132. Executive Documents, 25th Cong., 2nd Sess., Vol. II, 1837–38, Doc. No. 451, p. 45.



OUTLINE SKETCH OF ST. LOUIS RIVER
From above Big Island to Grassy Point

after the admission of Wisconsin, had treated and mapped Big Island and so much of this east or cut-off channel as lay beside it, as wholly inside Wisconsin.[1] Subsequently the island was patented to the state of Wisconsin in whole or in part,[2] so that there has never been a time during the statehood of Minnesota but what this cut-off channel for its greater extent has been without dispute wholly inside Wisconsin. A much later survey, elsewhere fully noted, placed the so-called Fisherman's Island inside Wisconsin.

c. Exact extent of controversy between Wisconsin and Minnesota: Does line G–B–C or line G–H–C represent middle of main channel or state line selected by Congress in 1846?

We start then with no dispute as to the course of the main channel from Big Island up to a point not very certainly fixed, lying somewhat westerly of this Fisherman's Island, its location being referred to by a majority of Minnesota witnesses as southerly of a narrowing described by them as a bar, which on their theory terminated the course of the main channel, this point being, for convenience and to correspond with Minnesota's designation, marked "C." The contention of Minnesota is that from here the course of navigation, and hence the main channel, veered quite decidedly in an easterly and northerly direction, and passing very close to Fisherman's Island, reunited with the cut-off channel at the point "B." This point "B" lies at the western extremity of the pocket which thrusts itself from Grassy Point toward the northeasterly extremity of Fisherman's Island. Upon their theory, the main and the cut-off channels, having so united at "B," the combined channel continued up this pocket in a nearly straight line to form a junction with the so-called Milford channel claimed by Wis-

[1] Minnesota Exhibits 20 and 21; Wisconsin Exhibits 7 and 8.
[2] Wis. Ex. 9 & 10. pp. 1036–1038.

consin as the main channel, at the lower extremity of the pocket, being the point "G". Thence the undisputed course proceeds from "G" to "A," which represents a junction with another channel called the Pokegama channel, which is sometimes referred to in the testimony, but whose existence is wholly irrelevant to this controversy. The waters which had separated at Big Island indisputably combined there with additions gathered on the way, to form "deep water opposite Grassy Point." Wisconsin conceives that the main current or channel continued its course according to natural physical law up toward the base of Grassy Point, and, curving east as it approached the westerly extremity of the point, continued over a course marked "H" upon the exhibits and this map, to the point "G".

The record is absolutely devoid of testimony which might supply any inference that the channel running from C via H to G ever crept over to and coincided with the line C–B–G. It will not be disputed that the larger volume of water at all times as to which evidence is obtainable or inference permissible found its way through the Milford channel. If a channel in any real sense ever existed from B to C, more particularly if it existed in 1846, this case presents the elements of deliberate choice between channels. One of the two was then selected for all time as the main channel, and, as stated in *Washington v. Oregon*, 211 U. S. 127, 136,

> "thus prescribed, remains the boundary, subject to the changes in it which come by accretion, and is not moved to the other channel, although the latter in the course of years becomes the most important and properly called the main channel of the river."

2. *There being no evidence of the course of actual navigation north of Big Island in 1846, the line of deepest soundings governs.*

In the case of *Washington v. Oregon, supra,* the court considered the situation where "both the north and south channels

were freely used," and it was "hard to say which was the most important, so surpassing in importance the other as to be properly called the main channel."[1]

a. Evidence of navigation in 1846 absent.

In the present case, however, we are confronted with the more or less anomalous proposition that while we are to fix the main channel of navigation as it existed in 1846, there was no evidence as to the course of navigation in 1846, for the reason that there was in fact at that time no navigation to aid or illustrate the location of the line. Minnesota's complaint states the situation clearly. "Practically all of Upper and Lower Saint Louis bays between the shores were navigable *for such vessels as were accustomed to use said bays at said time for the purpose of navigation*, and there was no defined course, or channel in said bays, which said vessels followed, but owing to the depth of the water, they were permitted and accustomed to travel across said bays in any direction."[2].

The record fixes 1854 as the earliest date of navigation by other than sailboats or canoes.[3] In the interest of fairness, however, we are constrained to call the court's attention to the fact that in 1850 "the propeller Manhattan * * * proceeded as far up as Fond du Lac Village."[4] But there is of course no record of the channel taken.

We have, then, a situation where it may be fairly said that the element of actual navigation in the sense contemplated by the decisions in fixing the "main channel of navigation" was wholly wanting, for it is inconceivable that navigation by "light draft craft," as it existed in 1846 and prior thereto, should be relied upon as any aid to illustrate the route to be thereafter taken by

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[1] *Washington v. Oregon*, 211 U. S. 127, 135.

[2] Record, p. 4–5, fol. 10.

[3] R. p. 452, testimony of Hiram Hayes.

[4] Owen's *Geological Survey of Wisconsin, Iowa, and Minnesota*, 1852 edition, p. 270.

vessels of the greatest capacity which the channel might accommodate. If the floating "of a fishing skiff or gunning canoe does not render a small stream navigable"[1] then surely the course of the fishing skiff or the gunning canoe upon the surface of waters deemed navigable and capable of navigation is not to be relied upon as establishing the highway of commerce.

b. There being no navigation in 1846, subsequent experience can raise no presumption as to its location then.

There being thus a total want of any evidence as to the course of navigation in 1846, and on the contrary, proof positive that there was no navigation in the sense in which that term is used in boundary disputes in that year, how is the main channel of navigation in that year to be located? By evidence as to the course of actual navigation subsequent to that time? Obviously not, we think. That subsequent use could not be determinative as to which channel was originally selected, is emphasized in *Washington v. Oregon, supra,* by the question, "Does the boundary move from one channel to the other, according to which is, for the time being, the most important, the one most generally used?" which the context plainly answers in the negative.

Washington v. Oregon, 214 U. S. 205, 215.

Davis v. Anderson-Tully Co., 252 Fed. 681.

Evidence as to channels taken in 1870 would doubtless be competent to raise a presumption as to the course of navigation in 1846, were it first proved that there had been such navigation in the earlier year. Then the suggestion in *Moore v. McGuire,* 205 U. S. 214, 222, where the court speaks of the "presumption from the establishment of the channel for a time running back nearly

[1] See language of Chief Justice Shaw, in *Rowe v. Granite Bridge* Corp., 21 Pick., 344, quoted in *The Montello,* 20 Wallace 430, 442, and in *U. S. v. Rio Grande Irrigation Co.,* 174 U. S. 690, p. 699.

or quite to the admission of Arkansas," might well apply, but to establish by presumption the location of a given thing at a given date when it affirmatively appears that it was non-existent, is quite beyond the application of any doctrine of presumption that has heretofore obtained. In other words, testimony by Minnesota as to their course of traffic in 1865 and 1870 can raise no presumption as to the course of such traffic in 1846 when it is known that at that time there was no traffic which had a course, and to assume that such would have been its course had there been traffic is carrying the matter into the domain of pure conjecture and guesswork.

Such proof of navigation might perhaps be of some avail on the theory that boats naturally followed the line of deepest soundings, but the operation of any such presumption is decisively cut off by the fact that prior to any navigation from B to C, testified to by Minnesota, we have the undisputed proof from the Meade survey, presently to be referred to, that the line of deepest soundings was not over the channel from B to C. We should, we submit, take into account at most only that which a representative of Congress who came upon the ground, instructed to monument the course of the boundary by a series of buoys, would have taken into consideration, and that is the actual physical situation at that time, as nearly as the same can now be ascertained by proven facts in the record, or within the scope of judicial notice, and such conclusions as are fairly inferable therefrom.

c. In absence of navigation, the line of deepest soundings controls.—The law stated.

In other words, there being no evidence of navigation, as stated by Dr. Travers Twiss:

> "If there be more than one channel of a river, the deepest channel is the Midchannel for the purposes of territorial demarcation; and the boundary line will be the line drawn

along the surface of the stream corresponding to the line of deepest depression of its bed."[1]

This language is quoted with approval by Creasy in his *First Platform of International Law.*[2]

Halleck's International Law says:

"As a general rule, this line runs through the middle of the deepest channel, although it may divide the river and its estuaries into two very unequal parts. But the deeper channel may be less suited, or totally unfit, for the purposes of navigation, in which case the dividing line would be in the middle of the one which is best suited and ordinarily used for that object."[3]

Obviously the limitation which he places on this rule, that "the deeper channel may be less suited, or totally unfit for the purposes of navigation," has no application here, because there is no proof worthy of the name to indicate but what the main channel contended for by Wisconsin was equally well, and we think better suited, and in every respect wholly fit for the purposes of navigation, while the test of ordinary use could have no application, because there was, as we have seen, no ordinary use.

The same principle clearly appears from the language of *Iowa v. Illionis*, 147 U. S. 1, 13, quoted in the Minnesota brief.[4]

"the jurisdiction of each state extends to the thread of the stream, that is, to the 'mid-channel', and, if there be several channels, to the middle of the principal one, or, rather, the one usually followed."

Certainly, if at the time of the fixing of the boundary there is no channel usually followed, then it must be presumed that it is "the middle of the principal" channel that has been selected for the boundary.

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[1] *The Law of Nations*, by Travers Twiss, p. 207.
[2] P. 223.
[3] *Halleck's International Law*, Vol. I, p. 182.
[4] Minnesota brief, p. 90.

Reynolds v. McArthur, 2 Peters 417, 440. Chief Justice Marshall stated: "The largest volume of water is certainly one indication of the main stream."

We must conclude, then, that the boundary as of 1846 is to be taken as running through the line of deepest soundings as they existed as of that date. And this line of deepest soundings, once determined, to our mind, the matter is at an end.

d. The line of deepest soundings in 1846, as shown by the Meade map, lay through the so-called Milford channel, which was therefore the main channel.

Approaching the consideration of the evidence in the light of this proposition, we come first to the physiographic delineation nearest in point of time to the admission of the two states. This was a survey made in 1861, under conditions that have already been described, but three years after the admission of Minnesota to the union. From the fact that Congress incorporated the description of the Wisconsin boundary as a term in that of Minnesota, and there being no evidence to the contrary, there is a double presumption that the condition of the main channel of the St. Louis River was the same in 1858 that it had been in 1846, and was the same in 1861 that it was in each of the two earlier years. We may fairly assume, therefore, that General Meade found and delineated the topographical situation as it existed in 1846.

(a) Presumption that condition in 1861 was same as in 1846.

We think the cases clearly recognize such presumption as to physical situations analogous to the present one. While it is often stated that presumptions do not run backward, as was well said in *La Platte v. Warren Cotton Mills*, 165 Mass. 487, 489, "But that depends on the case." In *Scott v. Lattig*, 227 U. S.

229, 241, discussing the question of the existence or nonexistence of an island at a certain date, the court enumerates among other factors establishing its existence at the date of the survey—

> "the conceded fact that in 1880, only 12 years after the survey, it was in the same condition as now."

and see the language of *Moore v. McGuire, supra,* already noted: *U. S. v. Hutchins,* 252 Fed. 841, 845. The question before the court in that case was the determination of the main channel of the Arkansas river on June 5, 1872. Evidence as to conditions in 1907 to 1913; observations in 1882 and 1883 were admitted, and the court said:

> "The later and present state of the channels does not control, but should have due weight in connection with the other evidence in arriving at the comparative prominence of the channels in 1872."

Other decisions establishing the probative value of this map are found:

Wigmore on Evidence, 437.

Washington A. & Mt. V. Ry. Co. v. Vaughan, 69 S. E. 1035, 1037.

King v. Burdett, 4 Barnewall & Alderson's Reports, 95, 124.

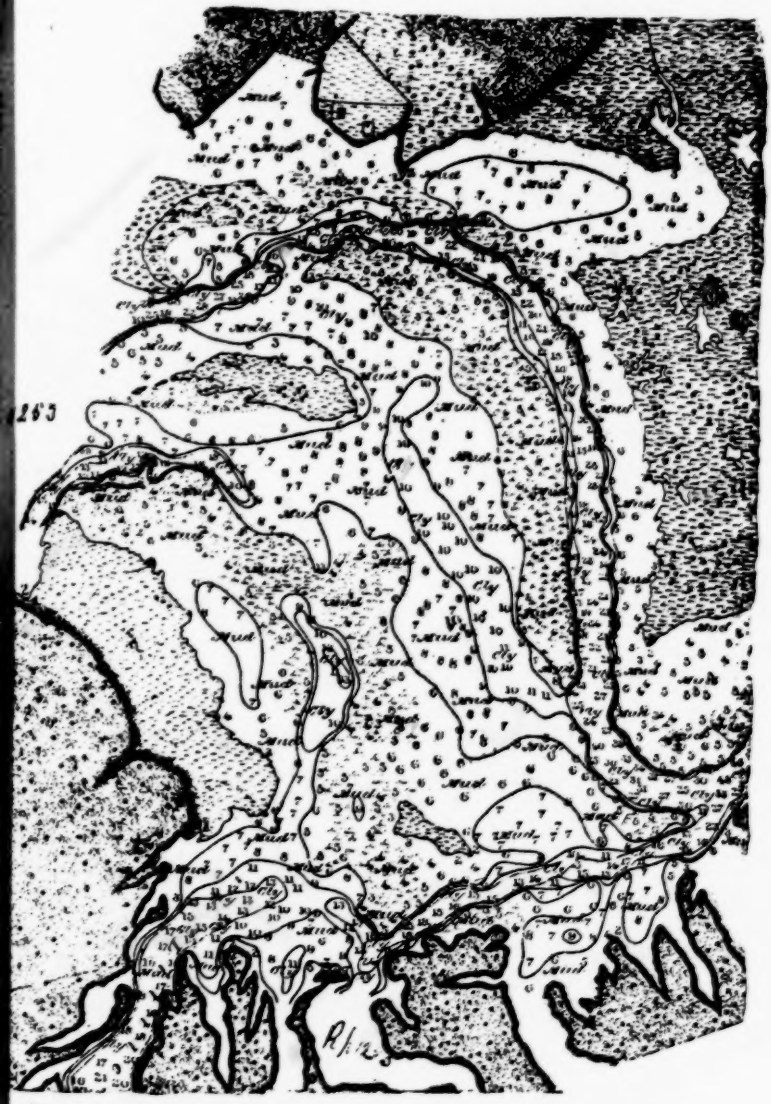
Sandiford v. Town of Hempstead, 90 N. Y. S. 76, 80.

Somerville v. City of New York, 137 N. Y. S. 919, 924.

Adams v. Junger, 139 N. W. 1096, 1100.

(b) Explanation of Meade map.

The Meade map was introduced in evidence in a variety of different forms, and inasmuch as the same is relied upon by both parties to the present controversy, we have thought it only fair to the court to reproduce the enlarged section of that map which appeared in evidence as Wisconsin's Exhibit 53 and Minnesota's Exhibit 54. With the aid of the preceding out-



Reproduction of Wisconsin's Exhibit 53, being a portion of Meade map, showing Grassy Point, Milford, the Desimval Mill, Fisherman's Island, and Main Channel of St. Louis River.

line sketch, the court will readily be able to relate the same to the testimony. Just opposite the figures 1253, appearing to the left of the map and above its middle, a 6-foot contour line is indicated, running to the right and encircling the so-called Fisherman's Island. Returning toward the left of the map, this line lies parallel to two other contour lines indicated, which represent respectively the 9 and 12 foot contour lines upon the easterly side of the main channel of the St. Louis River, whose course up to this point is wholly undisputed. As we proceed to the right, the abbreviation "Cly," for clay, appears the third time in this main channel, just before a constriction indicated by a narrowing of the space between the contour lines. At this point marked "C," upon various exhibits and upon our outline sketch, partially by reason of a bar to whose existence some of her witnesses testified, Minnesota contends that traffic was deflected around Fisherman's Island to the extremity of the little pocket, where the sounding "10" appears, which is marked "B" on their exhibits and upon our outline sketch, and from "B" proceeded down the pocket to its junction with the main channel just opposite and below the extremity of Grassy Point. This is shown to the extreme right of the map, conforming in outline to a cleaver suspended. A part of the name appears at the very outer edge of the picture. The two sets of curving contour lines which run parallel to the shore of Grassy Point, and curve as they approach the constriction in the channel already referred to, represent the sides of the main channel as contended for by Wisconsin. At the head of the bay, shown at the top of the map just above the narrowing of the channel, a log boom is indicated, the projection to the right of which represents the saw mill of Victor Desimval.[1] Still continuing to the right, the rounding point upon which two houses are shown has been identified as Milford.

With these preliminaries, we come to the interpretation of

[1] R. p. 123–4.

the map itself. We think that it would require but a casual inspection to locate the channel exactly where Wisconsin contends that the same was found. As expressed in the rough and ready phrase of Minnesota's distinguished witness, Leonidas Merritt, "Of course anybody looks at the map can tell that that is the deepest water."[1] And that the Meade map showed the proper depth, he attested with a vigorous affirmative,—"Yes, so far as anybody knows."[2] In fact, the only continuous channel apparent upon examination of the map is this channel which continues on past Milford toward the base of Grassy Point, and then curving downward proceeds parallel to the main shore, toward "deep water opposite Grassy Point." It should be constantly borne in mind by the court that this map was no mere academic portrayal of abstract scientific fact, but was a practical working plan for the use of busy and practical men, the safety of whose property depended on finding the proper course or channel through the waters in controversy. It is stated upon the chart as introduced in evidence that "characteristic soundings only are given." From these we find that the choice offered the court and the mariner in the selection of channels was between a channel in which these characteristic soundings, beginning at Grassy Point and continuing up the river, ranged from 40, 27, 21, 25, and 18 feet, and in general an average depth exceeding 20 feet, up to the narrowing of the channel opposite Milford, as against a depth and a volume of water indicated in the first portion of the Minnesota channel averaging 10 feet, and an apparent average of 8 feet over the vital portion of the Minnesota course from B to C.

The court will likewise give due weight to the fact that throughout this Milford channel indications of a clay bottom are continuous. While "Mud," an infallible index to a shallowing of

[1] R. p. 106.
[2] R. p. 108.

water and absence of channel or current, predominates all about Fisherman's Island both in the course B to C and also to the east of the Island in that portion of the "Cut-off Channel," which some witnesses called the "Corduroy Road."

(c) Interpretation of F. G. Ray.

The original map, prepared to show the result of General Meade's survey, was itself produced in court from the records of the survey office in Detroit by its legal custodian, Mr. F. G. Ray, Wisconsin's Exhibits 46–C and 46–D being photographic reproductions of the original map.[1] And the reproduction that we have submitted is of an enlarged photographic copy of a portion of this original map. We have the benefit in the record of his interpretation of the map. He stated:

> "On the St. Louis River there are indicated the 6, 9, and 12 foot contours showing depths of 6, 9, and 12 feet."[2]

And that—

> "The map indicates that there is a continuous channel of a depth not less than 12 feet."

Minnesota likewise procured an enlargement which was presented and on redirect examination he testified as to their so-called channel:

> "There would be a natural presumption that a boat could follow that line, with 8-foot draft."

And on recross-examination added:

> "I would say that the map doesn't indicate that there is greater depth than that along that course."[3]

So that, if we were to believe this interpretation of the Meade map by competent authority, there would be at the shallowest

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[1] R. p. 799.
[2] R. p. 800, fol. 1244.
[3] R. p. 807, fols. 1255, 1256.

place in the channel a clear advantage of four feet in depth over that which could be attained by taking the Minnesota course. The advantages of proceeding along that course would be very slight. The strongest that Minnesota's witness, Martin Wheeler, would put it was:

> "That would shorten it some but not so much. It would make it a little shorter."[1]

(d) Testimony of J. H. Darling.

Mr. J. H. Darling, who was intimately acquainted with the condition of the waters from his long experience while in charge of work in the harbor and from making a detailed survey in 1891, testified that the possible gain of taking the Minnesota course would be "somewhere near three hundred yards or nine hundred feet,"[2] a most inconsiderable advantage, especially when it is borne in mind that there was no channel at all along the course. The inference is strong to quote this witness:

> "they wouldn't take the chances or they wouldn't care to go into the shallower water for instance for the sake of a thousand feet only."[3]

(e) Testimony of E. B. Banks.

Mr. E. B. Banks prepared cross sections of the St. Louis River above Grassy Point, the same being designed to show the profile of the bottom of the water throughout the entire area in question, and the 20 cross sections, as plotted by him, show a definite bed of varying width, described by him as "the main channel of the St. Louis River." This appears as Wisconsin's Exhibit 54.[4] And he testified likewise that the Meade map indicated "a channel that is not narrower than 45 feet at any place."[5]

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[1] R. p. 954, fol. 1490.
[2] R. p. 612, fol. 941.
[3] R. p. 615, fol. 947.
[4] R. p. 861.
[5] R. p. 862, fol. 1342.

This then was the result of the first survey made of the area,— an undisputed depth of 12 feet at the shallowest point of the channel, and an undisputed width of 45 feet at the narrowest portion.

e. Evidence of deepest soundings prior to 1846.

But leaving the Meade map and the inferences and presumptions that may be properly drawn therefrom entirely out of account, there is other evidence well calculated to establish the situation existing long prior thereto.

(a) The Bayfield map.

The Bayfield map is much relied upon by Minnesota and enthusiastically commended in the testimony of her witnesses and in the brief of counsel as a marvel of accuracy and skill.[1] Antedating the admission of Wisconsin by some twenty years; the presumption of the continuance of conditions shown thereon thereafter down to the date of such admission, according, as it does, with the Meade map, is very strong. In our judgment, the examination of this map permits of but the one conclusion. The court may turn to the reproduction formally in evidence,[2] or, more conveniently still, may refer to the small scale reproduction embodied in the sketch accompanying General Meade's Report of 1861, found upon an earlier page.[3]

From the map in the record it appears that Captain Bayfield traversed the cut-off channel and left a record of his soundings over this course, there being in the vicinity of Fisherman's Island, soundings of a six- and eight-foot depth, and of this course, counsel for Minnesota, while claiming that it showed the channel substantially if not identically as claimed by the state of Minnesota,

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[1] Minn. Brief, p. 53.
[2] Minnesota's Exhibit 7.
[3] This Brief, p. 107, supra.

say that it "shows that the State line or main channel would be to the south of Big Island." But as they further admit, acquiescence has thrown this line out of consideration as a possible state line How, in the brief space of a single paragraph, the same survey could show the "main, navigated and navigable channel" "substantially, if not identically, as claimed by the State of Minnesota", and show "the State line or main channel * * * to the south of Big Island," with both states acquiescing "in the State line being to the north of Big Island", involves a feat of logic somewhat beyond our powers.

The net result, we presume, however, is that we must look for evidence of the main channel north and west of Big Island, and that, we think, as appears from both maps, is the course of the main channel actually delineated by Bayfield. Clearly it continued in a great swing along the Minnesota shore up to where it was thrown against the base of Grassy Point to be deflected thence eastward parallel to its shore. Not merely this, but as counsel for Minnesota advises, Big Island is delineated thereon as having "somewhat more of a point than it has ever had within the memory of living men."[1] We think this but mildly states the situation. The map, if entitled to the high certificate of accuracy, shows conclusively that Big Island then extended to and included Fisherman's Island, and not merely this but protruded far enough beyond the Milford of a later day toward the center of the curving shore of Grassy Point to indicate the existence of a solid barrier of land thrown clear across the all-important and indispensable segment of the Minnesota channel from B to C.

If Bayfield was even approximately correct, no boat could then have possibly navigated the so-called Minnesota channel in that portion, without whose navigation her case completely fails.

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[1] Minn. Brief, p. 53.

(b) Two maps of David Thompson.

That Bayfield was not merely approximately but absolutely correct appears from a still more important contemporary record made by a much more gifted and distinguished scientist. One version of David Thompson's map of the Mouth of the St. Louis River was formally introduced in evidence by Minnesota.[1] Upon this, as we have already seen, was delineated, by appropriately numbered stations, the course of the "east channel of the St. Louis River," which Commissioner Barclay so arduously labored to establish as an international boundary. The phrase "east channel of the St. Louis River" connotes at least the existence of another channel, possibly the "main channel of the St. Louis River,"—at least a west channel of the St. Louis River. Inspection of the map again reveals this west channel—by long acquiescence and practical construction, and now undisputed as the main channel to Fisherman's Island—in exactly the course delineated upon every map that was ever made of the stretch of water from Grassy Point to Big Island. But in the area vital to Minnesota's claim we find no indication of open water at all, but on the contrary, a liberal sprinkling of marsh and mud flats interposing a bulwark to navigation where Minnesota claims its course to have been.

As we have already seen in another connection, David Thompson mapped the estuary of the river St. Louis almost to the "Entry" between Wisconsin and Minnesota Points, and this map, differing somewhat in form from the one just referred to, had been drawn to the attention of Congress but a scant four years prior to the admission of Wisconsin, and in the form now reproduced for the convenience of the court, comes the nearest in point of time to establishing the exact information which Congress had or might most readily have had before it at the time of the admission of Wisconsin. And again we find over

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[1]Minnesota's Exhibit 59.

THE RIVER ST. LOUIS

LAKE SUPERIOR

ESTUARY OF

Grand Portage

American Factory

Pigeon Passage

Old N. Wests Comp Factory

Pekagumew Bay

Left Hand River

Scale of Geographical Miles

I hereby certify this to be a true Copy as far as it extends of the original Map filed by order of the Board of Commission under the 6.C.7 Article of the Treaty of Ghent.

David Thompson
Ast C Surv to the Board of Commission
under the 6.C.7 Art of the Treaty of Ghent

the Minnesota course a liberal sprinkling of islands, shoals or flats. More significantly still, upon this map appear two dotted lines which join above Big Island at the point where the channel of the St. Louis River divided, according to all the maps and testimony. From the fact that this dotted line continues up the stream until the falls are reached and then leaves the water where the "Grand Portage" is shown, we submit it must be clear that it was intended to delineate the course of actual track or travel. If this be so, the court will note that the lines shown indicate that all the main bays and inlets were examined and traversed. Westerly of Grassy Point we find Pekagumew Bay searched out with some detail, but so far as the navigator found, there was nothing to impress him or attract his attention to the existence of any channel over Minnesota's line. On the contrary, this great scientist and geographer, or his deputies, as the case may have been, delineates a course that hugs the shore of Grassy Point, examines into the inlet or bay at its base, and from thence conforms itself almost exactly to the Milford channel, claimed by us to be the main channel of the St. Louis river. We do not claim that this dotted line is an accurate attempt to delineate the channel, but we do claim that it illustrates the two more obvious routes above Grassy Point as Thompson found them.

(c) Descriptions of travelers.

Such evidence as we have as to the location of the main channel of the river in the minds of early travelers, while not so clear and specific as we might well wish it to be, seems to indicate the preponderance of their impressions that it was located north of Big Island.

Lieutenant Bayfield, who made his track survey over the route of the cut-off, in describing his course stated:

"We ascended the St. Louis, about 15 miles in a direct line from its entrance."[1]

Such a description could well be applied to the cut-off channel, which is more or less in the nature of a direct line. Other writers who visited the area, both before and after this time, presumably described the course which they took and the impression which the river made upon them. James D. Doty had written a few years earlier: "This river is very crooked."[2] James Allen, describing the situation running through St. Louis Bay, stated:

"We entered another bay, long and narrow, and which contracted gradually to the very narrow, crooked channel of the river."

• • • "The river for this distance is very crooked and winding but its general course up is southwest; *the channel is of variable breadth and generally deep.*"[3] (Italics ours.)

David Dale Owen described the river as "somewhat crooked."[4]

f. The line of deepest soundings, hence the main channel, conforms to the course of the curving shore line.

(a) Testimony of Leonidas Merritt.

Upon the basis of the undisputed physical situation, as revealed upon every map of the area that was ever drawn, that splendid character, Leonidas Merritt, ripened in honor and intellect, in frank, clear, thinking fashion, compressed into compact compass and pithy phrase, the only permissible conclusion as to the location of the main channel. Describing the course of the river from Big Island to Grassy Point, he said:

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[1] *Transactions of the Literary and Historical Society of Quebec*, Vol. I, p. 17.

[2] Vol. 13, *Wisconsin Historical Collections*, p. 202.

[3] Vol. V, *American State Papers*, Report of Lieutenant Allen, p. 326.

[4] Owen's *Geological Survey of Wisconsin, Iowa and Minnesota*, p. 270.

"Why this river came down kind of bank gravel probably or something. There's an island, ain't it (indicating)? Then it took off just as channels always do,—it took its trend off where it butted against this and struck something else here (indicating). The trend of the shore governs the channel of the stream wherever there is any current. For instance a stream naturally takes the belly, as we call it, of the shore where the shore trends in; then the channel will follow that until it strikes some obstruction or comes to some point and then it will cross over exactly as this bend indicates. If that bend is sharp it will cross sharp. If it is more slanting down river it will cross until it strikes something else and then it will come back. Wherever there is any current the trend of the shore always regulates the deepest water and throws that current to the point that has made the deepest water?"[1]

(b) Judicial deductions.

The accuracy of Mr. Merritt's deductions finds much confirmation, both in and outside the record. It is sustained by the language of this court in *Missouri v. Kentucky*, 11 Wall. 395, 408, where the court likewise was called upon "to determine that the east channel, or cut-off * * * was not the main channel." The opinion contains a map whose outlines present many similarities to the present situation, the diversion of the channel or current by an island, and the existence of a projection similar to Grassy Point; and these words are applied to the obvious physical features pictured, and may well be employed to demonstrate in the present case that the main current, or channel, of the river continued uninterruptedly to the base of Grassy Point. "This was necessarily so, as can readily be seen by an inspection of the map."[2]

We have still more recent judicial expression bearing upon the present controversy, and demonstrating the presumption that the main channel of commerce followed the Minnesota shore up

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[1] R. p. 104, fol. 104–105.

[2] *Missouri v. Kentucky*, 11 Wall. 395, at p. 410.

to and around Grassy Point. In the recent case of *Davis v. Anderson-Tully Co.*, 252 Fed. 681, we have an extremely interesting and significant discussion of testimony whose language, without the change of a phrase, is applicable to the present case. Referring to the bank of the river along the east side of land described, which occupied the same relation to the *locus in quo*, as does the Minnesota shore above Big Island to the scene of the present controversy, we find the bank described at p. 686 as—

"a bank which curved inward around the flowing river." Continuing—

> "where a navigable river flows between an island or the head of a peninsula upon one side and an inwardly curving bank upon the other side, it ordinarily hugs the curving bank, • • • that bank is generally eroded."

And finally—

> "that the deepest and more navigable part of the stream and its main channel of commerce ordinarily adjoins the curving bank."

3. *If testimony as to subsequent navigation controls, it does so only on the basis of the presumption of the continuance of existing things "running backward." Evidence of navigation nearest in point of time to the location of the boundary would be decisive.*

Under the elementary rule already laid down, the main navigated and navigable channel once fixed remained static. It did not shift from channel to channel with the shifting of traffic, or its temporary preponderance in one over the other. No such absurdity is contemplated as keeping tally on the number of voyages over a given course in a given year, and on the basis of such count, declaring the main channel for that year. Nor do we think that the "main channel" can be fixed on the basis of keeping a record of navigation for a period of years greater

or less in number, and declaring *that* the main channel which, throughout the period, revealed the greatest average number of voyages per annum. Nor could the channel be determined now by estimating the navigation from 1846 to 1893, and declaring *that* the channel which throughout those years had enjoyed the greater aggregate number of voyages. Obviously, if any presumption as to the location of the main channel in 1846 is to arise from the course of subsequent navigation, it is the course of navigation nearest in point of time to 1846 that would set the presumption "running backward," and control.

a. Testimony of Minnesota to navigation north and west of Big Island substantially confined to period from 1870 on.

In establishing such presumption, the evidence presented by Minnesota affords us but little aid. A résumé of the experiences of the fifteen Minnesota witnesses, reveals that the very earliest that any of them could predicate any experience with these waters was substantially twenty to twenty-five years after the original boundary had been fixed.

John Howard testified to his earliest recollection of navigation as 1870,[1] or twenty-four years after the establishment of the boundary line. His brother, Ben Howard, testified that the first raft was towed down in '67 or '68, and that his earliest experience in running a boat was in 1869 [2] but his testimony as to the course of navigation was specifically confined to "say from 1870 on." [3]

The testimony of Leonidas and Alfred Merritt is of course of little value or pertinence, because Leonidas Merritt placed all traffic exclusively in the channel south of Big Island, stating—

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[1] R. p. 46, fol. 11.
[2] R. p. 154, fol. 188.
[3] R. p. 156, fol. 191.

> "That is away back in 1857, the steamers that used to run up to Fond du Lac used to take this channel; the old Seneca was one and the side wheel steamer, I forgot the name of it, used to make almost daily trips. They always took this channel."[1]

And as we read his testimony, he had no experience with any navigation north of Big Island himself, and undertook to fix no line of traffic there.

Alfred Merritt began sailing in 1864 on the lake; "used to load lumber at a place called Milford," but not until 1868 did he begin navigating to Fond du Lac.[2] So that his experience with the channel in controversy did not begin for twenty-two years after the admission of the state. And the court will further find that his personal experience was limited to four trips northerly of Big Island three of which he went the Milford channel. So that, so far as his testimony has any bearing, it corroborates Wisconsin's contention. And both he and Leonidas Merritt frequently referred to the Milford channel as the main channel of the river.

Charles A. Krause had lived all but 3 years of his life at Fond du Lac, but he never navigated north of Big Island and his only attempt at doing so ended in disaster.[3] He testified to no traffic north of that island.

Albert Swenson had lived at Spirit Lake, commencing in 1870,[4] twenty-four years after the admission of the state.

D. E. Stevens did not come to Duluth until 1871.[5]

C. W. McManus commenced sailing in 1871.[6]

Alexander McDougall made his first visit to Duluth in 1868.[7]

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[1] R. p. 85, fol. 74.
[2] R. p. 111, fol. 117.
[3] R. p. 173, fol. 220.
[4] R. pp. 176–7, fol. 225.
[5] R. p. 210, fol. 282.
[6] R. p. 225, fol. 305.
[7] R. p. 233, fol. 319.

located there in 1871,[1] and knew nothing of any navigation north of Big Island.

F. A. Brewer came to Duluth in 1880.[2]

John H. Norton came to Duluth in 1891.[3]

Martin Wheeler began his navigation in 1868.[4]

H. G. Inman ran one season in 1885.[5]

George Lloyd ran the same year.[6]

John J. Jeffry commenced to follow the water in 1870.[7]

And if the court will search and sift the testimony with minute care and attention, we submit that not a word will be found in the testimony of any witness for Minnesota testifying to any experience or observation of navigation northerly of Big Island, and consequently pertinent to our inquiry, prior to the year 1870.

b. Wisconsin witnesses furnish proof that earliest course of navigation north and west of Big Island was in Milford channel.

Turning from this barren record made by witnesses for Minnesota, we find that Wisconsin, through four witnesses, clearly established the course of navigation from 1855 to 1870, so far as it lay north of Big Island, as running through the Milford channel.

(a) Hiram Hayes.

Hiram Hayes, to whose wide range of information the record is indebted for extracts from the works of McKenney and Ritchie already noted, occupies the position in this case of being one of

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[1] R. p. 234, fol. 321.
[2] R. p. 259, fol. 362.
[3] R. p. 275, fol. 388.
[4] R. p. 949, fol. 1482.
[5] R. p. 964, fol. 1506.
[6] R. p. 968, fol. 1512.
[7] R. p. 993, fol. 1554.

the most important witnesses called. His experience antedated by some six years the observation and experience of any other witness produced as to the course of navigation north of Big Island, between Grassy Point and Fond du Lac. His testimony constituted a very model of brevity and concise directness, indicating undimmed power of intellect coupled with an unusual gift of expression. We think the court may well conclude that there was no witness produced on either side under less necessity of being "very careful not to state his age,"[1] or of concealing any other infirmities.

Coming to Superior in 1854, it would seem that he took up a preemption at Oneota, which lies just below Grassy Point, in 1855.[2] And during the year 1857 or 1858 he was county judge of St. Louis County, Minnesota, the county in which the city of Duluth is now located. He testified to being familiar with the river above Oneota in early days, from "going up in small boats and in excursion boats, *which was often.*"[3] Going up the boat took the cut-off, proceeding on to Fond du Lac.

> "In coming down they would take the northern route, north of Big Island, on that course, seeming to be aided by current in going home."[4]

They went "very close to the Minnesota shore."

This portion of his testimony is presented fairly enough in the Minnesota brief,[5] but following this, he testified as to the very heart of the matter in controversy.

> "Q. But you remember that they went close to the Minnesota shore below Big Island?
>
> "A. Yes, down by what is called Millford.
>
> "Q. And down through Grassy Point, what course did they take between Millford and Grassy Point?

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[1] Minnesota brief, p. 153.
[2] R. p. 451, fol. 682.
[3] R. p. 464, fol. 703.
[4] R. p. 464, fol. 704.
[5] Minn. brief, p. 154.

"A. Following not far from the Minnesota side." [1]

His cross examination fixed the time of these trips, which he had stated were often—

> "both before I was away, between '55 and '60, before the war, but more frequently after I returned. * * * '66 and on." [2]

So far from this testimony being worthless, as genially characterized by counsel for Minnesota, we suspect that the court is likely to find that in point of supplying information, it may come more nearly to deserving the characterization of being the exclusive testimony as to the location of the boundary line. It is by six years earlier than that of any other witness. His observation and testimony as to this period of time are not rebutted or contradicted, and no effort was made to shake his conclusion in any way. And it therefore stands as an undisputed verity in the present action, that so far as we have any knowledge of the course of navigation to the northerly of Big Island, the area with which we are solely concerned, it passed "down by what is called Milford," and on "following not far from the Minnesota side."

(b) James Bardon.

Mr. James Bardon, whose excellent standing is vouched for by the Minnesota brief,[3] and who is characterized by Leonidas Merritt as "the big man of Superior," [4] contributed the next earliest experience as to actual navigation north of Big Island. He gave such testimony as to the channels used in the early days as might be expected of an intelligent witness endeavoring to be careful and accurate in his statements as to an incident whose occurrence antedated the trial some fifty-six years. His

[1] R. p. 464, fol. 704.
[2] R. p. 464, fol. 705.
[3] Minn. brief, p. 259.
[4] R. p. 98, fol. 95.

knowledge of conditions in the very early days was based on the following experiences.

He had a preemption claim fronting on the St. Louis River "about three miles below Fond du Lac."[1] He was on this preemption claim "in the late '60's; probably from '67 or '8 until I proved up."[2] And going to and from the claim, he went by boat ordinarily, which took him over the waters every trip back and forth. He went every month or two; sometimes oftener. Earlier than this, and in 1862, with the four Merritts, he had taken a contract to load a boat from the Desimval mill at Milford, saying, "so that I did have some experience up there and have some basis for stating where the channel is."[3] It appeared that in 1862 he and five others had taken a scow up the St. Louis River to Fond du Lac, going by "the shallowest water * * * on the southerly side of the island."[4] These last were the qualifications that he sought to set forth.[5] He was likewise a member of "two or three kinds of commissions about the harbor at different times * * * was a member of the County Board, and one of the members of the Board when the dock lines first."[6] His earliest recorded experience, however, was when he—

> "went to Fond du Lac on the Steamer Seneca in the fall of '61 with a party, with Agent Webb, then Indian agent, making a payment to the Indians in the fall of '61. The Seneca was a boat that drew six or seven feet of water."[7]

He likewise referred to the Manhattan and the James Carson

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[1] R. p. 763, fol. 1185.
[2] R. p. 768, fol. 1192.
[3] R. p. 789, fol. 1226.
[4] R. p. 790, fol. 1228.
[5] R. p. 786.
[6] R. p. 769, fol. 1194.
[7] R. p. 768, fol. 1192.

making trips up the river. On the basis of this experience, he testified to the course taken by the Seneca.

> "We followed deep water, I suppose, as well as they could find it in that bay. That was in '61, probably before the charts were published. They found their way up there. They went north of the Big Island. The channel was fairly well known to the old-timers, I think, before Meade published his chart."[1]

And while he frankly disclaimed any familiarity with the deep water course prior to the time that he went up on the Seneca, he stated: "I have learned it since, coming and going, a great many times."[2] He readily admitted that he could not describe the course taken, "particularly as she went around Grassy Point." We think it doubtful whether any witness could testify with particularity after such a lapse of time.

> "Q. But you do know that it went north?
>
> "A. I know she went up there anyway and I know she went around as all boats nearly, went around north of the Big Island.
>
> "Q. Do you know the course that boats usually took in going up St. Louis River?
>
> "A. I think I do.
>
> "Q. What course did they take?
>
> "A. They followed practically the course as outlined on Meade's chart. That is the best way I can describe it.
>
> "Q. The deep water channel as indicated on Meade's chart?
>
> "A. Yes, sir.
>
> "Q. Will you step here, Mr. Bardon. This is Wisconsin's Exhibit number one, supposed to be the Meade chart. Here is Grassy Point. Can you indicate on that map the course the boats usually took in going up the river?
>
> "A. This is Millford, I think, over here, place they called Millford; saw-mill and flouring mill, first flouring mill at the head of the lakes; flour mill annex to a saw-mill; used to go up that way over towards Millford and around.

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[1] R. pp. 770–1, fol. 1196.

[2] R. p. 771, fol. 1197.

"Q. You have indicated the channel marked by the red line?

"A. Seems to be, yes.

"Q. That is the channel that boats usually and customarily took?

"A. So far as I know, yes. They would go around over that way and around the island was the way they found." [1]

(c) Victor Desimval.

We come next to the testimony of another important, if not vital, witness, Victor Desimval. His treatment in the Minnesota brief furnishes an interesting study in the psychology of argumentative enthusiasm. He is introduced with the bland assurance that "the most important thing he testified to was his great age." He is represented as having stated that he came to the head of the lakes in '55 and took a preemption claim near Milford after the Civil War, but locates the time as from '62 on.[2] They found in his testimony "a good deal of immaterial stuff," while that which was pertinent could not be true, "as probably more than two dozen witnesses testified that *all* the traffic in the early days was over the channel marked A–G–B–C."[3] An invitation to "compare that testimony with the testimony of at least two dozen other witnesses," leads to the comforting conclusion that his testimony was "practically worthless."[4] Our curiosity stimulated by the presence of such an anomalous witness, we proceed first of all to search out the "two dozen witnesses" that overwhelmed the old man by their sweeping testimony "that all the traffic in the early days was over the channel marked A–G–B–C," meaning, we can fairly presume, by early days, the days prior to 1869, to which Mr. Desimval's testimony was confined.

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[1] R. pp. 771–2, fol. 1198.

[2] Minnesota brief, p. 237.

[3] Id., p. 238.

[4] Id., p. 243.

First of all, we waive all criticism of the fervor that transformed the total of fifteen witnesses into twenty-four. Examination, however, has already disclosed that of the fifteen witnesses who were produced by Minnesota, ten of them—John J. Jeffry, George Lloyd, H. G. Inman, John H. Norton, F. A. Brewer, Alexander McDougall, C. W. McManus, D. E. Stevens, Albert Swenson, and John Howard—laid no claim to any experience in navigation, nor any actual knowledge of the situation, as we understand their testimony, prior to 1870. Ben Howard towed his earliest raft in '67 or '68; had his first experience with a boat in '69, but as to the course of navigation, specifically confined his testimony to "say from 1870 on."[1] Martin Wheeler testified that he began his navigation in 1868. That he was probably mistaken in the year is indicated by the fact that he testified that Captain Jack Jeffry started in '69, the year after he began,[2] while Captain Jeffry fixed the commencement of his navigation in 1870.[3] That there could be no conflict between the testimony of Mr. Wheeler and Mr. Desimval appears from the fact that the Desimval mill was gone when Mr. Wheeler began to navigate. He testified very clearly as to the existence of a saw mill at Millford.

> "There had been. There wasn't at that time. There was one there in an early day but it was dismantled at that time."[4]

Charles A. Krause at no time had any experience with navigation north of Big Island. Leonidas Merritt testified to none, and put all navigation south of the island. Out of the two dozen witnesses evoked to annihilate the testimony of Desimval, there then remains but one—Alfred Merritt. And that there was no real conflict between Victor Desimval and Alfred Merritt is, we think, very clearly apparent.

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[1] R. p. 156, fol. 191.
[2] R. p. 950, fol. 1484.
[3] R. p. 993, fol. 1554.
[4] R. p. 956, fol. 1494.

Alfred Merritt testified in the aggregate to having made four trips north of Big Island. But one of these, as we shall see, illustrated the use of the Minnesota channel. That was on the occasion of bringing down one raft of logs from Spirit Lake, whose course he detailed,[1] and involved the statement upon his part that to take that course he "left the main channel." But our interest now is, when did this navigation occur? The record discloses that this log towing took place "about thirty-seven years ago, I think; it might possibly be thirty-eight years ago."[2] Deducting these years from 1917 would place the experience of the sole survivor of the twenty-four as having transpired in 1879 or 1880. Alfred Merritt, then, if any of the remaining three trips above Big Island took place in Mr. Desimval's time, navigated exactly the channel that Mr. Desimval was to describe. His testimony is corroborative, not contradictory, in other respects. He stated:

> "We used to go up to Millford; Victor Desimval ran the mill at that time. That was in '65 and '66, '67. I wouldn't say."[3]

That Mr. Desimval was there still earlier appears from Mr. Meritt's statement, "In 1864 I was sailing on the lake and we used to load lumber at a place called Milford."[4] He likewise located the mill upon the Meade map,[5] stating that on Minnesota's Exhibit 1, "east of where it is marked 'Boom' there should have been a dot there for a mill." That slight variations were made in the Meade map in successive issues would appear from an examination of the map as successively presented. Upon Wisconsin's Exhibit 46–C, of which a portion has been reproduced for

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[1] R. pp. 133–4, fol. 154.
[2] R. p. 127, fol. 144.
[3] R. p. 977, fol. 1525.
[4] R. p. 111, fol. 117.
[5] R. pp. 123–4.

the benefit of the court, we find, instead of the word 'Boom,' that the same is indicated by a representation of logs and a chain across the head of the bay, with the mill and dock indicated just to the east of the logs. The fact that this original Meade map disclosed the location of the boom and mill would seem to fix Mr. Desimval's experience as commencing in 1861 at least, and continuing until '67, if no regard be had to his own testimony.

But what of the testimony of Victor Desimval himself? It is true that Mr. Desimval was an old man, going on 85. He came to Superior in 1855, but didn't live there very long, when he took a piece of land in Minnesota on the St. Louis River above Grassy Point; "took that land in '57, I guess it was; '56 or '57."[1] This he placed "about a mile and a half from Grassy Point up,"[2] and if his measurement was taken from the tip of Grassy Point, this was substantially accurate. Whether the testimony of Mr. Desimval is accurately quoted may be fairly questioned, in view of the very large number of obvious mistakes that are scattered through the record. It is not an important proposition, but Mr. Desimval did not say that he "went over and took a pre-emption claim near Millford" after the Civil War,[3] but located "the time as from '62 on." What he did say was that he took the land in '57. He may have intended to emphasize the fact that his residence continued until after the Civil War. If his answer were punctuated, it might have read:

"I lived there right after the Civil War—from '62 on,"[4] We submit that this hypothesis is quite as fully in accord with the facts as the presumption that he was so ignorant that he assumed that the Civil War was over in 1862.

He started to run the saw mill at Milford in the early '60's,[5]

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[1] R. p. 707, fol. 1095.
[2] R. p. 708, fol. 1095.
[3] Minnesota brief, p. 237.
[4] R. p. 707, fol. 1094.
[5] R. p. 708, fol. 1095.

and for seven or eight years thereafter he was thus located on the shore immediately opposite the crucial angle of the present controversy. From this point of vantage, he overlooked the very forking of the channel, if such there was. Common knowledge and common information would indicate that in this somewhat isolated situation, the coming and going of boats before his very eyes would be well calculated to arrest and attract his attention. Especially would this be true as a matter of preliminary curiosity, in ascertaining whether a boat was coming to his saw mill or going elsewhere. Another factor well calculated to call his attention to the course of boats in the vicinity was the fact that they stopped at his dock for fuel.

He testified that the first boat up the river was the Manhattan, which ran clear up to Fond du Lac,[1] his testimony in this respect finding confirmation in the report which Dr. Owen had made in 1852, which has been elsewhere noted. There was no saw mill above Milford, and so far as lumbering was concerned, the boats "just came to the mill, took part of their load and went out in the channel, and finished their load in deep water."[2] He had himself run a boat one year called the Stillman-Witt, in the '60's, and after the lapse of forty years, and so far as the evidence shows, without prompting or the assistance of other maps, he delineated the channel with accuracy. His little map was introduced in evidence, and a reproduction of the same appears herewith.

He also testified that weeds or rushes grew up on the sides of the channel, and that there was a current in the channel. He testified to one other boat that went up two or three times in the '60's, which took what was—

> "called the St. Louis River channel • • • the only channel there was • • •. That boat used to stop at the

[1] R. p. 708, fol. 1096.
[2] R. p. 709, fol. 1097.

mill. I used to sell him slabs for fuel. He used to stop there about twice a week at the mill, taking on slabs."[1]



Victor Desimval's map of main channel of St. Louis River from Grassy Point to Milford.

And again—

"Went up the river, on his way up and on his way down. • • • Same channel exactly. No two ways about it."[2]

As to his own experienre with the Stillman–Witt, he said:

"We used to go up twice and sometimes three times a week with the Stillman–Witt; we passed through. • • • Used to go up there one day and out on Lake Superior the next day, excursions."[3]

He also testified that while at Milford he used to be—

"Out there twice a day, you might say, in the summer, hunting ducks."[4]

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[1] R. p. 712, fol. 1102.
[2] Id.
[3] R. p. 712–3, fols. 1102–3.
[4] R. p. 713, fol. 1103.

As to the cut-off channel, he testified:

> "The other one is nothing, what they call the cut-off is nothing only for row boats and canoes." [1]

This he confirmed on cross examination.[2]

Irrespective of what the capacity of the cut-off channel in those days may have been, the court will note that for the period covered, which is the earliest to which any witness was able to testify as to personal navigation, the testimony of Mr. Desimval is practically exclusive and wholly uncontradicted. He is indeed almost the sole reliance of the court for really accurate information as to conditions in the region which most strongly claims our interest and attention. And he, too, notwithstanding his age, his want of education, and his misfortunes in business, had the merit and fortune to testify in accordance with the topography of the region, the antecedent physical probabilities, and the surveys and examinations of the government engineers.

(d) John Stevens

Another witness whose impressionable years were spent at Milford and the Desimval mill was John Stevens, who moved to Milford with his father when he was fourteen years old, as near as he could remember, and lived there for five or six years,[3] moving away before the mill shut down. Asked as to becoming familiar when living at Milford with the channel in which boats ran up the river, he answered:

> "Well, the only way I come to be familiar with that channel • • • is by seeing these heavy draft boats running up and down there when I was a boy before ever I went on the tug. • • • The channel come right out from Grassy Point and down through to what they called the Millford Slough. That is alongside of where the Millford dock used

[1] R. p. 711, fol. 1100.
[2] R. p. 716, fol. 1108.
[3] R. pp. 1002, 1004.

to be, and follow on down. • • • Up, I should say, not down. Excuse me."[1]

And he testified that boats that loaded lumber at Milford "took that same channel, took that channel from the Milford dock to the Grassy Point and that way."[2]

(e) Conclusion.

These four witnesses stand alone in their testimony as to the actual course of navigation north of Big Island prior to 1870. Their testimony went into the record undisputed and incapable of dispute. It is exclusive and controlling; it is all the testimony that there is. We are not called upon in any way to depreciate or dispute the excellence of Minnesota's witnesses; they simply had, or at least disclosed, no knowledge of navigation north of Big Island prior to 1870. Therefore, if testimony as to the course of navigation in the earliest days is to control, no Minnesota witness has contributed anything to the solution of our problem. So far as their testimony did not relate to navigation subsequent to 1870, it unanimously fixed the course of navigation south of Big Island; and of course what may or may not have happened in any channel that led to the south of Big Island is wholly irrelevant to the present controversy. We are solely concerned with the course of navigation from that part of the undisputed main channel just above Milford to the extremity of Grassy Point, and upon this question Minnesota's testimony sheds no light.

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[1] R. p. 1004, fol. 1571.
[2] Id.

4. *No claim is made that the course of navigation in 1893 differed from that of prior years; hence the main channel of the St. Louis River was the same in 1893 as in 1846, and contemporary surveys and records locate the main channel, and consequently the state line, in 1893, in accordance with Wisconsin's contention.*

Assuming, however, that navigation and its course subsequent to 1870 could be helpful in determining the location of the main channel of the St. Louis River, is it not obvious that the inquiry should primarily be direced to a determination of the location of the main channel in 1893, rather than to diffuse itself over all the intervening years?

a. In absence of prior avulsion or change of traffic, the middle of the "main channel" in 1893 would coincide with the state line—law stated.

It is undisputed that no alteration, improvement or change now in controversy in the waters lying westerly of Grassy Point, had been made prior to 1893. In that year a certain amount of dredging was done, whose exact location is shown upon Wisconsin's Exhibit 37. The result of such dredging, of course, would not in any way affect the location of the state line, for either it conformed to the course of the pre-existing channel of commerce, in which case the continuance of the great bulk of traffic in that channel thereafter until 1902 merely confirmed other testimony as to the location of the boundary, or else it amounted to dredging out a new channel, in which case the boundary would still continue in the old channel. Among cases which establish this proposition may be cited *Arkansas v. Tennessee*, 246 U. S. 158, at 173, *A. G. Wineman & Sons v. Reeves*, 245 Fed. 254, *Whiteside v. Norton*, 205 Fed. 5, *Norton v. Whiteside*, 239, U. S. 144. In the absence of some

showing that change in the nature of avulsion had transferred the main channel or current of the river, or that there had been a radical change in the volume of traffic from one channel to the other, the state line in 1893 would coincide with the line then taken continuously and habitually by the greater number of boats.

(a) No avulsion prior to 1893.

That there was no avulsion prior to 1893 is of course evident. The area as delineated by Thompson almost a hundred years ago and by Bayfield shortly thereafter, pictures the same situation as found by Meade in 1861, by Parkinson in 1885, by Darling in 1891. The general outlines and conditions throughout all the years seem to have remained substantially the same. That this was the fact was likewise testified to by Leonidas Merritt.[1]

(b) Minnesota claims no change in volume of traffic, but is committed to the proposition that "main channel" in 1893 was where it had been from 1846 on.

Nor is there any claim or showing that from 1846 to 1893 the relative volume of navigation in the different channels changed. On the contrary, "it is the contention of the State of Minnesota that it produced practically every living competent witness who navigated these waters in the early days, and that they all testified without exception that the channel 'A,' 'G,' 'B' as shown by Minnesota's Exhibit 1 was the 'main, navigated and navigable' channel from the beginning of navigation at the Head of the Lakes until improvement was made by the United States Government by dredging."[2] Their contention that the

[1] R. p. 101.
[2] Minn. Brief, p. 93.

main channel of commerce which they sought to establish was one that had a continuous existence from "the earliest times down to 1893" is emphasized and reiterated in the discussion of the testimony of witnesses John Howard,[1] and that of Mr. Howard, Mr. Leonidas Merritt and Mr. Alfred Merritt,[2] the testimony of Ben Howard,[3] Albert Swenson,[4] Darwin E. Stevens,[5] Captain McDougall,[6] Martin Wheeler,[7] George Lloyd.[8]

Minnesota, then, is unreservedly committed to the proposition that the main channel of commerce in 1893 was the one employed from the admission of the state of Wisconsin down to that time; in other words, that it was the state line. This, indeed, the considerations of avulsion or transfer of traffic through other cause from a channel once fixed, being laid aside, might well be taken as the time when use and usability, which are laid down as the decisive factors in determining the location of the main channel of the river, could best be illustrated. Other considerations apart, the natural time for applying the test as to use, navigation, or commerce, would be not when they were absent, but when they had attained their maximum. To take a cross section of conditions just prior to the time when commerce had so developed that the river in its natural condition no longer accommodated the traffic whose sailing needs required that existing channels be developed, altered, or cast aside, would seem most logical and appropriate. Then we would have an exemplification of the greatest demands of commerce as actually accommodated by the river in its unchanged conditions.

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[1] Id., p. 97.
[2] Id., p. 106.
[3] Id., p. 116.
[4] Id., pp. 120, 121.
[5] Id., p. 123.
[6] Id., p. 126.
[7] Id., p. 142.
[8] Id., p. 145.

b. The Lake Survey Bulletin for 1893 advised the navigator only of the existence of "the natural channel of the river," identical with the main channel contended for by Wisconsin.

It would naturally follow, therefore, being conceded that the main channel of commerce in 1893 was where it had always been and still coincided with the state line, that could any reliable, authentic, unbiased delineation of the location of the main channel of the St. Louis River in 1893, just prior to the first dredging westerly of Grassy Point, be found, that such delineation would end the labors of the court. Fortunately,

Where, then, was the main channel of the St. Louis River in 1893, and how may its location be ascertained? We submit that the mariner, undertaking to navigate those waters equipped with the survey chart, successive editions of which have been placed before the court, would turn naturally, as should the court, to the Survey Bulletin of the Northern and Northwestern Lakes, designed "to supplement the information given on the charts of the Great Lakes." Doing so, the court will find in the bulletin for 1893, this information:

> "St. Louis River, Minn. and Wis. *January, 1893.*—From Grassy Point to Fond du Lac by the natural channel of the river is about 14 miles, and for 9 miles of the distance there is over 16 feet in depth for from 100 to 300 feet in width; but the channel is limited to 8 feet by a few short shoal places up to the passenger depot at Fond du Lac, and then by one shoal place to 6 feet for 2 miles farther. There are deep pools with from 30 to 50 feet for quite long stretches.—*Chart No. 3, Lake Superior, West end of Lake Superior.*"[1]

We anticipate to state that, as will presently appear, the Department of Engineers in charge of harbor improvements prior to this time had likewise stated, "the length of this main river channel is 13 miles;"[2] Fond du Lac was about "14½ miles by water above the Grassy Point Railroad bridge,"[3] and this part of

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[1] Bulletin No. 2 of the Survey of Northern and Northwestern Lakes, April 1, 1893, p. 4.

[2] Ann. Rep. of Chief of Engineers, 1892 Pt. 3, p. 2153.

[3] Id., p. 2151.

the river channel was 15 miles.[1] So that, so far as the navigator was advised in the charts and supplementary information painstakingly issued for his guidance, but one channel, to-wit, the natural channel of the river was described. That such conception has never been departed from appears from many subsequent reports one of which is typical of all:

"St. Louis River—Natural Channel. Between Grassy Point and Spirit Lake the meandering natural channel, * * * has been blocked at various points by dock construction."[2] And this, of course, could only be the main channel through which lay the state line.

c. Survey of Fisherman's Island and location of main channel by George R. Stuntz.

Fortunately in addition to the Lake Survey Chart and the information thereon, two additional official delineations of the very area in controversy were made at or just prior to this time, so logical and opportune from the standpoint of our investigation. By a somewhat remarkable coincidence, the court may examine a map of this very area, drawn by the man who had made the first official survey of the boundary between Wisconsin and Minnesota some forty years earlier. George R. Stuntz, whose remarkable qualifications we have seen dilated upon by his superior officers in connection with his service at the earlier period, and who is described by Leonidas Merritt as a long-time resident of Minnesota and characterized as "quite authority" on any question of old surveys,[3] was again employed by the Commissioner of the General Land Office in 1893 to survey

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[1] Id., p. 2148.

[2] Bulletin No. 26, Survey of Northern and Northwestern Lakes p. 87. April, 1917.

[3] R. p. 97.

MAP OF ISLAND

in the

St Louis River, in

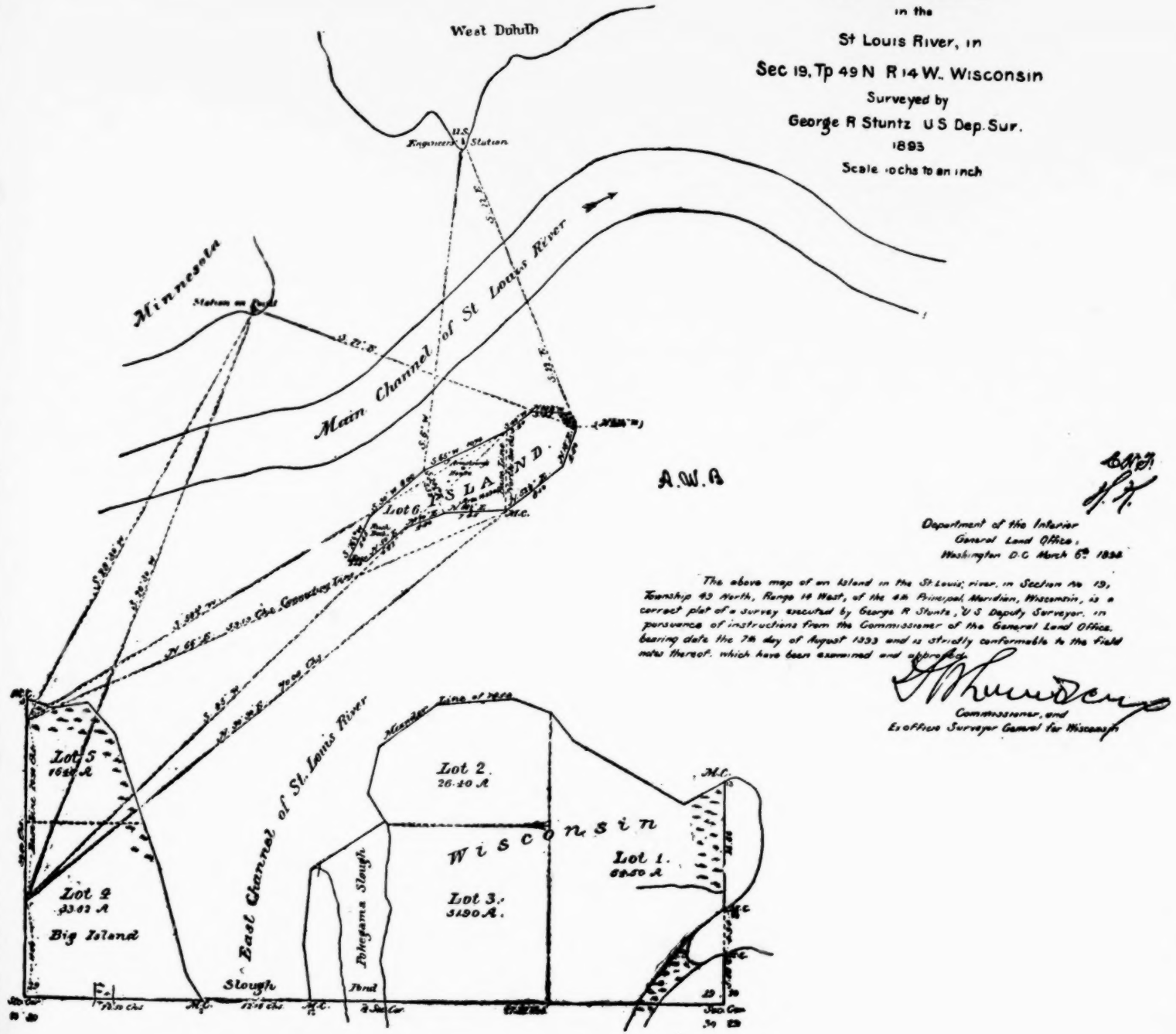
Sec 19, Tp 49 N R 14 W. Wisconsin

Surveyed by

George R Stuntz U S Dep. Sur.

1893

Scale 10chs to an inch



Department of the Interior
General Land Office,
Washington D.C March 6th 1894

The above map of an Island in the St Louis river, in Section No 19, Township 49 North, Range 14 West, of the 4th Principal Meridian, Wisconsin, is a correct plat of a survey executed by George R Stuntz, U S Deputy Surveyor, in pursuance of instructions from the Commissioner of the General Land Office, bearing date the 7th day of August 1893 and is strictly conformable to the field notes thereof, which have been examined and approved.

Commissioner, and
Ex officio Surveyor General for Wisconsin

Fisherman's Island. Having now been domiciled in Minnesota for almost the entire forty years that had elapsed since the original survey, we may assume, we trust, that his work can be presented as that of a competent and disinterested public official, freed from all taint or suspicion of bias attributable to the sinister fact of a one-time residence in Wisconsin. The results of his survey are especially pertinent and persuasive, by reason of the fact that the island which he was employed to survey virtually projected itself into the suppositious channel whose existence counsel for Minnesota labor so earnestly to maintain. He was occupied in the survey for two or three days, commencing August 14, 1893 and completing on August 16.[1] And in surveying the island, as appears from the map herewith reproduced, he three times crossed the suppositious Minnesota channel going and coming from the mainland, and his survey of all the northerly portions of the island placed him upon the very edge of the channel. Surely, as an engineer of long standing, long acquaintance with the waters, and some pretensions to scientific attainment, had there been a channel there he would have noticed its existence. It is, indeed, a matter of fair presumption that after forty years' residence, during which time he came and went upon the waters, he would have known of the channel apart from the survey. That he was interested in the existence of the channels of the St. Louis River is disclosed by the map. We find him delineating the existence "of the east channel of St. Louis River" some distance removed from the scene of his survey. We likewise find him tracing " the main channel of St. Louis River" but in the zone of Minnesota's channel, no channel at all is named or shown. On the contrary, the main channel of the St. Louis River, as pictured by Mr. Stuntz, is drawn in exact conformity with Wisconsin's present contention, and its course delineated at least half way down the westerly side of Grassy

[1] R. p. 1028.

Point. That the course of the river was a very definite conception in his mind appears from his statement that—

> "five hundred miles of wharfage can be made available; between the mouth of the river and Fondulack the head of navigation. By the main channel the distance is about twenty miles."[1]

Referring to the so-called cut-off channel, we find him employing exactly the same phraseology that Commissioner Barclay had used in his effort at procuring the adoption of this river as a boundary line. He states:

> "The east channel of the St. Louis River will of necessity be maintained and improved,"[2]

this being his name for the cut-off channel. His field notes disclose that while his survey was in process, the improvement of the channel was likewise getting under way. He states:

> "The Harbor Engineers have driven a line of piles to guide the dredge in deepening the channel, and have numbered these piles."[3]

And he notes that the dredge was then at work.

d. Surveys and reports of Department of Engineers from 1879 to 1904, illustrating the location of the main channel of St. Louis River prior to dredging in 1893.

The dredge came to this vicinity in response to local agitation and demand for improvements, whose satisfaction had been long deferred. Its coming was preceded by detailed consideration, surveys, and mapping of the waters in successive sections all the way from the Entry to Fond du Lac.

The Department of Engineers, whose activities have been so long signalized by entire disinterestedness and distinguished ability, that its very name stands as synonymous with *esprit de corps*, fairness, accuracy, and absolute impartiality, has settled the question before the court. Pursuant to direct Congres-

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[1] Record page 1032.
[2] Id.

sional mandate, we shall find that its able and upright representatives, under their oaths as unbiased public servants, have made and left the contemporary record of their investigation. Their work was done under the direct observation and scrutiny of these rival communities, alert to seize and hold advantage, and lynx-eyed in their ability to detect aggression and prompt and efficient to repel it.

The court in effect has now before it the same result that would be attained by a commission hereafter appointed to stake out this boundary line, except that such commission, if appointed, could not have the benefit of the observations of witnesses a third of a century nearer the time when the state was admitted into the Union, whose opinions were no doubt consulted by the engineers in charge of the surveys. In addition to this, for twenty-five years preceding the institution of the present action the results of the survey made by the Department of Engineers stood unprotested and unchallenged from any source or quarter.

(a) Report of 1879, stating, "the channel of the St. Louis River forms • • • the boundary line," and reports to 1884.

The Department of Engineers appears to have had continuously in mind in their dealings with these waters, their interest and significance as the boundary between the states. As we have seen, it was said in the annual report for 1879:

> "The channel of the Saint Louis River forms, for a distance of some 20 miles from the entry, the boundary line between the States of Minnesota and Wisconsin."[1]

In the next year, the report of the overseer in charge refers to the natural channel of the Saint Louis River opposite Peyton's Mills."[2]

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[1] Report of Chief of Engineers, Part II, 1879, p. 1471.
[2] Report of Chief of Engineers, Part III, 1880, p. 1880.

A special report of the Board of Engineers, made January 29, 1881, discusses improvements both on the East and on the West side of Rice's Point, the same terminating "with the channel at the mouth of the Saint Louis River," in one case, and on the West side, starting "from the channel of Saint Louis River." Similarly, suggested improvements on the Superior side were to intersect "with the channel of Saint Louis River, opposite Connor's Point."[1]

The Engineer's Report for that year discusses these improvements leading "to an intersection with the channel of the Saint Louis River,"[2] and suggests that dredging of the channel along the west side of Rice's Point towards or up "to the north shore of Saint Louis River, frequently called Saint Louis Bay."[3]

Still dealing with Superior Bay, another year saw further reference to intersections "with the Saint Louis River channel."[4] The report for this year (1882) contains a map,[5] whose examination we earnestly press upon the attention of the court. Running from Connor's Point to Rice's Point to the so-called "Entry," we have a well delineated outline, identified as "Channel of the St. Louis River." There is likewise shown Peyton's pier and mill, to which reference is made in previous reports, and the proposed railroad bridge extending from Rice's Point to Connor's Point, is indicated. The map likewise shows the two lighthouses, which we have seen were respectively designated as at the "mouth of the St. Louis River," and the "St. Louis River pierhead." The report also refers to the changes that had occurred since the survey of 1861, and suggested the preparation of a new map.[6]

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[1] Ex. Documents, 3d Sess., 46th Congress, 1880–81, Vol. 28, Doc. 82, p. 3.

[2] Report of Chief of Engineers, Part III, 1881, p. 2019, p. 2024.

[3] Id., p. 2021.

[4] Report of Chief of Engineers, Part III, 1882, p. 2096.

[5] Id., Opposite p. 2102.

[6] Report of Chief of Engineers, Pt. III, 1882, p. 2096.

In the report of the ensuing year, more definite reference was made to the region most acutely in controversy here. In the report of the Assistant Engineer for the two harbors, it was said:

> "An appropriation is needed to dig a channel along the west side and parallel to Rice's Point, and one from the deep water in the channel of the Saint Louis River, between Rice's Point, Minnesota, and Conner's Point, Wisconsin, up along the established dock line on the south side of Saint Louis Bay, to a point in deep water near the south end of Grassy Point. Between Grassy Point and Fond du Lac the river is narrow and in most places the water is deep. After a channel is dug across the Flats of Saint Louis Bay, the upper portion of the river can be improved at a comparatively small cost." [1]

This conception of the St. Louis River above Grassy Point as narrow corresponds to that which we have already set forth from the report of Lieutenant Allen,[2] who referred to the gradual contraction "to the very narrow crooked channel of the river" at Grassy Point.

The report for 1884 discusses dredging "on a line past the Blast Furnace docks to intersect with the channel of the Saint Louis River,"[3] and from the Quebec wharf "to an intersection with the channel of the Saint Louis River opposite Connor's Point."[4]

Within a week following the making of this report, the appropriation bill for ensuing improvements was passed, which provided for—

> "Improving Superior Bay and Harbor, Wisconsin; also the channel of the Saint Louis River through said bay, forty-five thousand dollars." [5]

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[1] Report of Chief of Engineers, Pt. II, 1883, p. 1623.
[2] This Brief, p. 41.
[3] Report of Chief of Engineers, Pt. III, 1884, p. 1809.
[4] Id., p. 1818.
[5] Ch. 229, July 5, 1884, Vol. 23, U. S. Stat. L., p. 137.

Provision was made for examinations or surveys:

> "Minnesota and Minnesota and Wisconsin, Saint Louis Bay, and Saint Louis River, from Connor's Point, Wisconsin and Rice's Point, Minnesota, to foot of first falls."[1]

(b) The Survey of St. Louis River in 1884, pursuant to act of Congress. Reported, "for the distance surveyed, the boundary between the States of Minnesota and Wisconsin," and reference to and discussion of St. Louis River in reports to 1890.

Pursuant to the directions of Congress, we find that the survey commenced December 5, 1884 and the field work was completed January 10, 1885.[2] Major Allen, who spent two days in the vicinity, stated, prior to the actual survey, in a preliminary report of August 28, 1884:

> "Saint Louis Bay is an enlargement of the Saint Louis River above Rice's and Connor's points, discharging between those points into the Bay of Superior. The first named bay, Saint Louis, is about 1½ miles in width by 3 in length, with depths of water varying from 6 feet to 15 feet. The channel between Rice's and Connor's points has depths of 14 to 22 feet. From the head of Saint Louis Bay to Fond du Lac, near the first falls, a distance of about 13 miles, the river is tortuous, with shoals, as well as narrow and deep channels."[3]

His subsequent report, dated January 22, 1885 states:

> "*The Saint Louis River and Bay, the latter an enlargement in width of the river, form, for the distance surveyed, the boundary between the States of Minnesota and Wisconsin,* and discharge into the bay of Superior, through the channel between Rice's and Connor's points."[4]

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[1] Id., p. 151.
[2] Report of Chief of Engineers, Pt. III, 1885, p. 1961.
[3] Id., p. 1960.
[4] Id., p. 1961.

And again, detailing the course of the channel, he says:

> "Inspection of the tracing shows a 16-foot channel extending northwesterly from the south end of Rice's Point for a distance of about 2,000 feet, when it shoals gradually to 12 feet depth, carrying this depth for about 1,000 feet. From the extremity of the 12-foot curve to a point about 2 miles up the bay the depth is quite uniform, averaging 7½ feet. From this point the 16-foot curve again commences, the channel running nearly south, with increasing depth, rounding Grassy Point, and finally merging with the channel of the river near 'The Island.' "[1]

This is but a repetition of the report of his assistant, Mr. Parkinson, to whom the actual details of the survey were entrusted, who states:

> "A channel, indicated by the 16-foot curve, extends northwest along Rice's Point from its end, a distance of about 2,000 feet.
>
> "Here the channel ends, and from this point up the bay the bottom is exceedingly uniform, averaging between 7 and 8 feet depth. A little more than 2 miles from the end of the Rice's Point Channel the 16-foot curve is again encountered, its end being distant about 3,000 feet northeast of Grassy Point. From this point the channel runs nearly south, with increasing depth, rounds the lower end of Grassy Point, then extends in *a northwest direction nearly parallel to its west shore*, and then, bending gradually to the west and south, merges into the channel of the river near 'The Island.' "[2]

No maps are included in the report for that year, showing the results of the survey. The report, it will be noted, is dated January 22, and Wisconsin's Exhibit 31–C bears on its face the statement that it is "to accompany Major Allen's report of January 22, 1885." Construing the report and the map together, we have then the direct statement of the engineer in charge that this is a map "for the distance surveyed" of "the boundary between the

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[1] Report of Chief of Engineers, Pt. III, 1885, p. 1962.
[2] Id., p. 1963.

states of Minnesota and Wisconsin,'' made pursuant to direct Congressional authority. Here, then, is an authoritative delineation of the location of the identical line, whose whereabouts has occasioned the present controversy, made eight years prior to any change or disturbance in the topography of land or water, by competent disinterested public officials with no bias or motive for distorting or misrepresenting what they found.

This report and map alone, in our judgment, were no other item of evidence introduced, should efficiently settle the controversy in Wisconsin's favor.

Attentive consideration of Exhibit 31–C discloses that this map which purports to picture the results of a survey of the very object of our inquiry bears upon its face the statement that the red line denotes a 16 foot curve; the yellow line a 12 foot curve, and the blue line an 8 foot curve. Immediately to the northwest of Fisherman's Island, subsequently surveyed by Mr. Stuntz and the map of which has already been reproduced in this brief, lies the so-called ''bar,'' or in fact the narrowing of the channel. The 8 foot curve runs entirely across the bar, and the minimum depth shown inside this curve is 8½ feet.

This exhibit is designated as being on the scale of one inch to 500 feet, and at the very narrowest point of the channel, we find a distance of ⅛ inch between the lines, which would correspond to a width of 62½ feet. So that we have here a clear delineation of a channel 62½ feet wide, with a minimum depth of 8.6 feet. This is the only continuous channel that is mapped. A faint line surrounds the area to the south and east of Grassy Point, indicating a species of pocket running over toward the general vicinity of the island, but stopping over 2,000 feet from the channel of the St. Louis River drawn upon the map. From the extremity of the pocket so delineated, a line of soundings continues in a straight line in the direction of Big Island, doubtless intended to indicate the general depths of the cut-off channel.

It requires but a glance at the exhibit to note the thoroughness with which the characteristic soundings have been taken and reproduced, and we think that even more significant than the lines and figures upon the map are those which have been omitted. To our mind, the fact that these engineers in the government employ found no depth or soundings in the area in question is significant and decisive upon the proposition that there was nothing there whose notation was worthy of record in a fair, accurate map of the region. In other words, for over 2,000 feet of the supposed or so-called Minnesota channel, Messrs. Parkinson and Kinnaird and Silvey found it non-existent.

The court will note that the soundings which are arranged in rectangular form nearest the island record depths on the northwesterly side of 7.8, 7.2, 4.9, 2.6, 2.9, 3.0, and 3.7; and thence proceeding on the northeasterly side, 3.2, 2.8, 1.7, 3.2, 5.1. 6.6, 6.5, 6.7, 7.7, 7.1, 6., 7.3, and at the tip of the pocket, 8.1, the presumption being, we take it for granted, that had soundings been deemed worth while nearer the island, they would have disclosed even shallower depths; and surely there is nothing about the depths recorded to inspire the belief that within this area so essential to Minnesota's claim, there lay some missing, mysterious, unmapped channel.

Here, then, we have come to an end of mere guess work, mere hit or miss, haphazard drawing of lines or attempted mapping of state boundaries. The sounding line and the surveyor's instrument had thus, eight years prior to any alteration in any of the channels lying westerly of Grassy Point, ascertained, and the Department of Engineers had preserved in graphic form the picture of the boundary line between the two states; and as we shall see, the boundary thus ascertained and established by the Department of Engineers, was consistently and continuously without interruption or exception adhered to as the expression of the sober, scientific opinion of the men with the best opportunity to

know where the boundary line was located, and the least motive or inspiration for locating it other than where it actually was.

The map, which apparently had not proceeded sufficiently toward completion to be embodied in the report of 1885, appeared in the report of the ensuing year, and we reproduce on page 183 the pertinent portion of the map, which was the first published delineation of the main channel of the St. Louis River in the vicinity of Grassy Point.[1]

The court is also respectfully requested to note the designation upon the complete map in the report of the main channel of the St. Louis River, extending from Connor's Point toward the "Entry." The report accompanying the map again refers to "the channel of the St. Louis river" near Rice's Point.[2] Varying this, we also find reference to a "channel along Rice's Point to the Saint Louis River."[3]

The next year saw the full area depicted in Exhibit 31–C reproduced, with some additions in the Engineer's report.

The report likewise notes that—

> "It is within the range of possibilities that some improvement to the channel of the St. Louis River may be required shortly.
>
> "There is almost uninterrupted navigation for vessels drawing 12 feet of water as far as the log-booms below Fond du Lac.
>
> "The tracing showing the channel of this river as far as the first rapids accompanies this report, but no estimate of the cost of improvement is submitted at present, for the reason that the developed interests are not sufficiently defined to indicate the character of work required."[4]

And because of the greater simplicity of outline, we present for the consideration of the court this graphic representation of the

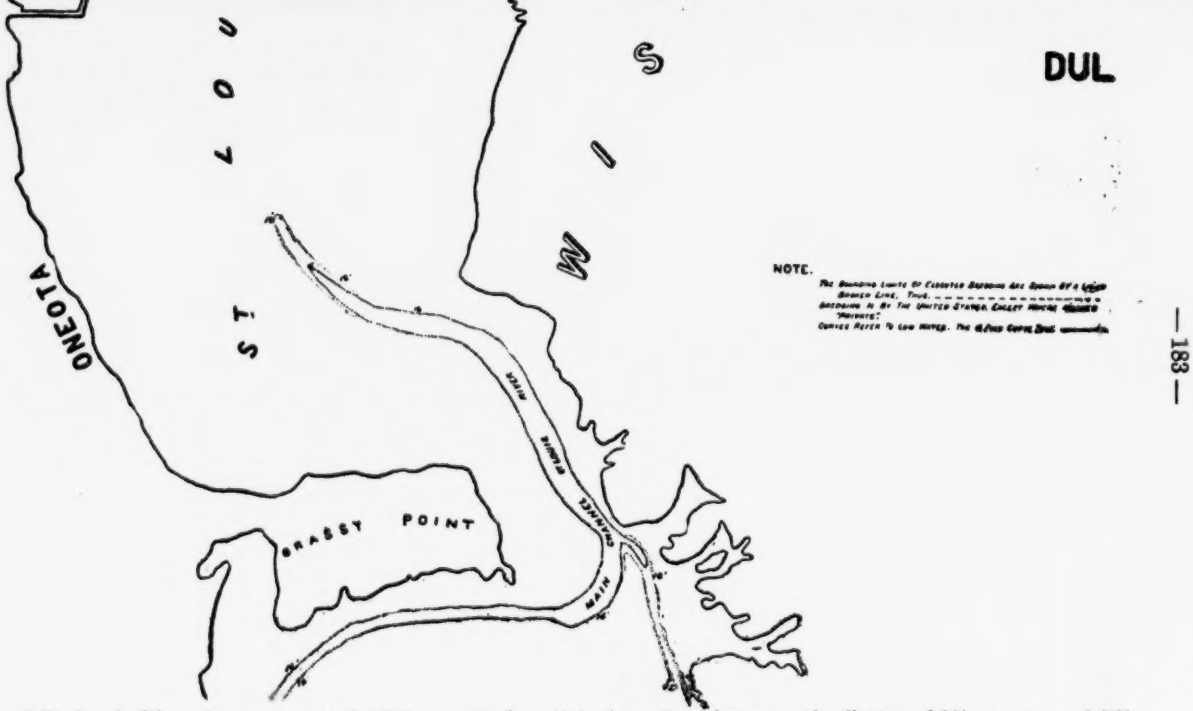
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[1] Annual Report of Chief of Engineers, Part III, 1886, op. p. 1632.

[2] Id., p. 1627.

[3] Id., p. 1629.

[4] Ann. Rep. of Chief of Engineers, Part 3, 1887, p. 1939.



Map of St. Louis River from survey of 1885, reported as "the boundary between the States of Minnesota and Wisconsin." From Annual Report of Chief of Engineers, 1886, Pt. III, op. p. 1632.

St. Louis Bay and River, an inspection of which absolutely negatives suggestion or suspicion of the possibility of the existence of the so-called Minnesota channel, and affirmatively illustrates the understanding of the engineers that the channel of the St. Louis River extended across this so-called bar, and on toward Grassy Point.[1]

The Chamber of Commerce of the city of Duluth presented to the Captain of Engineers in charge a detailed memorandum of the requirements of navigation, but no protest, no suggestion that a mistake had been made in the location of the channel which had been denominated as the boundary between Wisconsin and Minnesota.

The next year, reference was made to the "improvement of the St. Louis River channel within the bay of Superior,"[2] and to the "channel along east side of Rice's Point to the Saint Louis River."[3]

The year following, notation is made that "$40,000 was provided for the commencement of work upon a channel along the north shores of St. Louis Bay to connect the deep water at Connor's Point with the deep water of the St. Louis River at Grassy Point."[4] And under the title, "St. Louis River," appears this extremely significant statement:

> "The rapid growth of Duluth has produced a market for large quantities of the fine building stone quarried at Fond du Lac. *In consequence of this the navigation of the St. Louis River has reached some importance*, and it is likely that a navigable depth of 10 feet will soon be necessary to accommodate it."[5]

The Chamber of Commerce, by its secretary and by a committee, again favored the engineer in charge with information, and their

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[1] Id., map op. p. 1944.
[2] Ann. Rep. of Chief of Engineers, Part I, 1888, p. 231.
[3] Id., p. 230; Part III, 1888, p. 1806.
[4] Ann. Rep. of Chief of Engineers, Part 3, 1889, p. 2002.
[5] Id.

views as to the needs of commerce, but so far from protesting the location of the main channel of the St. Louis River, and hence the boundary between Wisconsin and Minnesota, and Duluth and Superior, as grounded in error and mistake, these vigilant guardians of the welfare of Duluth, who counted among their number Mr. J. D. Ensign, a respected judge of the courts of Minnesota, apparently adopted the views of the Department of Engineers, for speaking as if with reference to a defined, definite, and well understood matter, they said:

> Superadded to this, the deep-water channel above Grassy Point and extending to Fond du Lac, with short reaches of shallow water, should be made the more easily available for the extension of our manufacturing system along St. Louis River and Bay by the improvement of the channel to which the committee invite your attention."[1]

And the West Duluth Land Company, anticipating the completion of this "report to the War Department," called "attention to the remarkable development now taking place."[2] The Duluth Brown Stone Company communicated its views and needs, but still no word of complaint as to the location of the boundary channel.[3] The West Superior Chamber of Commerce voiced its judgment "that the natural channel of the river as it passes through Superior Bay should be widened."[4]

The year 1890 was most fruitful and productive in its evidence. Under the title, "Improvements which are being considered," it was stated:

> "The St. Louis River, above Grassy Point, has a depth of over 10 feet for several miles, and 8 feet to Fond du Lac Station."[5]

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[1] Ann. Rep. of Chief of Engineers, Part 3, 1889, p. 2008.
[2] Id., p. 2009.
[3] Id., pp. 2009–10.
[4] Id., p. 2014.
[5] Ann. Rep. of Chief of Engineers, Part 3, 1890, p. 2287.

While another map appears, this time with the channel of the St. Louis River written upon the stretch of water immediately adjacent to and parallel to the shore of Grassy Point, no reference to any other channel in that vicinity appears. On the contrary, it is expressly stated upon the map:

> "Existing channels are shown thus • • • denoting the 15 foot curve of depth."[1]

And again we find the nearest figures to the vicinity of the claimed Minnesota channel indicating depths of 3, 5, and 7 feet, respectively. So that, so far as an interpretation of this map is concerned, no boat drawing more than 3 feet could have made the course indicated by Minnesota witnesses. And again we find nothing in the way of protest or objection appearing from any representative of the city of Duluth or the state of Minnesota.

(c) Establishment of dock line "along eight (8) feet curve of depth of the natural channel of the St. Louis River," hence along the state line, by Minnesota legislature. Agitation by citizens of Duluth, and procurement of the adoption of this dock line by War Department in 1890.

On the contrary, we find that representatives of the city of Duluth were actively pressing for a decision of most illuminating character and involving in the clearest possible way their understanding, and the understanding of the Minnesota legislature, as to the location of the main channel, or the natural channel of the St. Louis River; and as a necessary consequence, the boundary line between the States of Wisconsin and Minnesota. These proceedings were published out of their chronological order, but turning to the Engineer's Report for 1891, we find that the Secretary of the Chamber of Commerce of Duluth had presented to the Secretary of War a petition, which set forth—

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[1] Id., op. p. 2292.

"that dock lines in the State of Minnesota have been established along Minnesota Point, along the mainland, along both sides of Rice Point, and along the Bay and River St. Louis, as is shown by the ordinances and act of legislature, copies of which are hereto attached and to which reference is made,"

representing that it was—

"extremely desirable that the General Government should take up the question of these dock lines and determine whether or not it will ratify the action taken by the local municipal authorities upon the subject."[1]

The act of the state legislature so referred to was dated February 25, 1887, and is found in the same volume as "An Act to define the boundaries of, and establish a municipal government for the city of Duluth," which as we have seen fixed the terminus of the boundaries of that municipality at the "mouth of the St. Louis River."[2] The act for the establishment of the dock line becomes of interest to us in that portion of its description which begins at—

"a point on the west line of Mountain avenue in the town of Oneota in said county prolonged, distant three thousand (3,000) feet from the monument at the corner of First (1st) street and Mountain avenue in said town of Oneota, thence south five (5) degrees and thirty (30) Minutes east, for a distance of about twenty-five hundred (2,500) feet to the eight (8) feet curve of depth of the natural channel of the St. Louis river, and thence following this curve of depth by and around Grassy Point to the west line of township forty-nine (49) north, of range fourteen (14) west, of the fourth (4th) principal meridian."[3]

This portion of the description may be readily identified by reference to the map in this report (1891) which designates the

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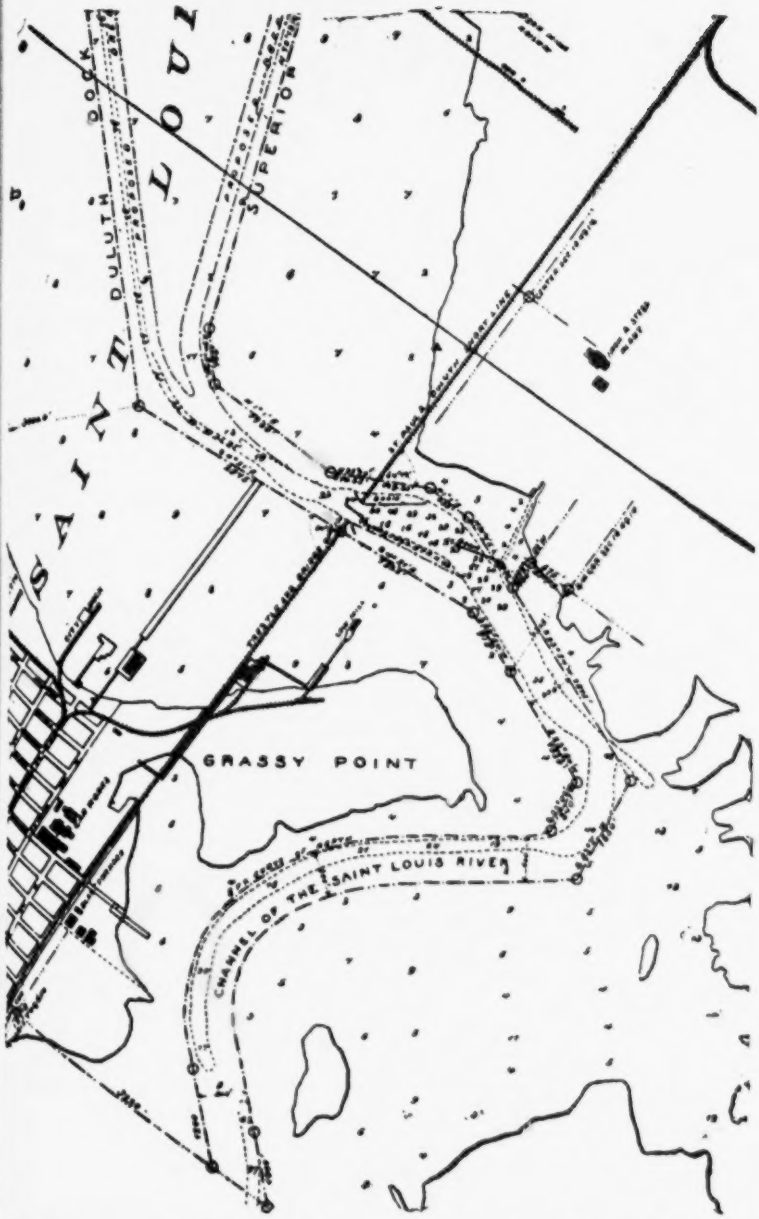
[1] Ann. Rep. of Chief of Engineers, Part 4, 1891, p. 2515.
[2] Record, p. 1062; Brief, p. 122.
[3] Ch. 316, Special Laws of Minnesota, 1887, p. 916.

channel of the St. Louis River as did the report for the previous year, but in additon bears upon its face a delineation of the dock line finally established, and by reason of its three-fold reflection of the conception and understanding of the legislature of Minnesota, the citizens of Duluth, and the War Department and its Department of Engineers, is herewith reproduced.

There we find that the point distant 3,000 feet from the monument at the corner of First Street and Mountain Avenue lies in the Bay of St. Louis; that the next term, or course, being a distance of about 2,500 feet was doubtless intended to carry the dock line to the trestle and bridge of the St. Paul and Duluth short line railroad, which we note from the map is distant 2,975 feet from this point of beginning. Here the court will note, the Minnesota legislature conceived and recorded the view that the 8 feet curve of depth of the natural channel of the St. Louis river might be found. It is then provided that the dock line shall follow this curve of depth by and around Grassy Point to the west line of township 49 North, of Range 14 West.

The legislature of Minnesota thus, in 1887, six years prior to any disturbance of the natural condition or situation of the waters in the vicinity of Grassy Point, had designated and referred to the "natural channel of the St. Louis River," which necessarily and obviously admits of but one construction, that such natural channel in its mind was the main channel, or the only channel of the St. Louis River; and having regard to the interests of its citizens and the development of business in the vicinity of Grassy Point, in its wisdom, it fixed a dock line along this 8 foot curve of depth of the natural channel of the St. Louis River, and by appropriate penalty forbade any intrusion beyond this dock line. What clearer, more definite recognition of the location by duly constituted authority of the state line could possibly be found?

The dock line for the area adjacent to Grassy Point may like-



Portion of map showing dock line around Grassy Point established by War Department in 1890. From Report of Chief of Engineers, 1891, Pt. 4, op. p. 2490.

wise be found on Wisconsin's Exhibit 31–E, which will be referred to presently.

The residents of the municipality most immediately concerned, having thus presented to the Secretary of War the determination of the legislature of Minnesota as to the proper location of the dock line, pursuant to this petition, the Acting Secretary of War, on July 24, 1890, constituted a Board of Engineers to report upon "the harbor lines at Duluth, Bay of St. Louis, Superior Bay, and adjacent waters."[1] The board "assembled at Duluth, Minnesota, August 21, 1890," and proceeded—

> "to consider the location of the harbor lines required at Duluth, Minn., the Bay of St. Louis, Superior Bay, and the adjacent waters.
>
> "The Board examined the maps in the office of the engineer in charge of the district, and afterwards spent half a day in traversing the probable lines. The Board also considered the several municipal ordinances of Duluth and Superior providing for dock lines within the limits of their jurisdiction, and by the legislature of the State of Minnesota beyond the limits of Duluth A tabular statement of these ordinances, etc., is hereto appended.
>
> "The views of the representatives of the several localities involved were invited and the Board was accompanied in the inspection of the dock lines prescribed by the municipal ordinances and legislative acts above referred to by Mr. C. F. Johnson, collector of customs of the port of Duluth, Maj. M. R. Baldwin, president of the Duluth Chamber of Commerce, and Mr. W. F. Street, the secretary of the Chamber of Commerce of Superior.[2]
>
> "After due consideration of the questions involved the Board recommends that with some slight changes the harbor lines described by the municipal ordinances and legislative acts cited, and as hereinafter described and referred to the true meridian, be approved. The changes that the Board recommends are * * * that in the vicinity of Grassy Point the dock line of the Minnesota side of the channel

[1] Ann. Rep. of Chief of Engineers, Part 4, 1891, p. 2516.
[2] Id., p. 2516.

shall be so established as not to reduce the width between the dock lines at any point to less than 600 feet.

"The following description by courses and distances indicates the locations of the dock lines in accordance with the foregoing recommendations, and the map hereto attached and submitted as part of this report exhibits the lines drawn to correspond with the description."

Turning to their description of the harbor line, we find that it runs—

"* * * * * * * * * * to a point on the west line of Mountain avenue, Oneota, prolonged, distant 3,000 feet from the southwesterly corner of Oneota street (formerly First street) and Mountain avenue, Oneota; thence by true bearings south 4°51′ east about 2,975 feet to a point on track center of the St. Paul and Duluth Short Line Bridge, 150 feet west of west end of draw span and making an angle with said track center of 84°50′ reckoned to the north of the westerly direction of the track; thence continuing in same direction of south 4°51′ east about 1,925 feet; thence south 23°54′ west 915 feet, to a point 1,315 feet due west of the southwest corner of section 16, Township 49, Range 14 west; thence continuing in same direction of south 23°54′ west 1,630 feet; thence south 83°2′ west about 840 feet to the 8-foot curve of depth on northerly side of the natural deep-water channel of the St. Louis River; thence following this curve of depth up to a point in the southerly prolongation of the township line between townships 49 north, range 14 west, and 49 north, range 15 west, 3,220 feet south of the quarter-section corner, at west side of section 18, township 49, range 14 west, excepting that the dock line leaves the 8-foot curve of depth about 1,200 feet before reaching the above described point on the township line, and proceeds in a direct line to said point."[1]

While the dock line on the Wisconsin side is fixed:

"Commencing again at the initial point of the description, namely, 575 feet north 1°1′ east, and 400 feet north 88°59′ west, of the southwest corner of section 16, township

[1] Ann. Rep. of Chief of Engineers, Part 4, 1891, p. 2517.

> 49, range 14 west; thence south 23°54′ west 2,875 feet; thence south 83°2′ west about 1,550 feet to a point 600 feet southerly from the 8-foot curve of depth on the northerly side of the natural deep-water channel of the St. Louis River; thence following up said river parallel to and 600 feet from said 8-foot curve of depth to a point in the southerly prolongation of the township line between townships 49, range 14 west, and 49, range 15 west, 3,970 feet south of the quarter-section corner at west side of section 18, township 49, range 14 west, excepting that for the last 1,000 feet of the last-described course the dock line follows the 8-foot curve of depth on the southerly side of the natural deep-water channel of the St. Louis River."[1]

A reference to the map discloses that the dock line on the Duluth side, except for fixing the distances with greater certainty, is adoptd in express terms from the dock line previously fixed and established by the Minnesota legislature, the phraseology, it will be noted, referring to the "natural deep-water channel of the St. Louis River," beginning to the southeast of Grassy Point, then following its 8-foot curve of depth as in the Minnesota dock line, while the Wisconsin side is fixed 600 feet south from the "8-foot curve of depth on the northerly side of the natural deep-water channel of the St. Louis River," and thence continues parallel.

Pursuant to the recommendation of the Chief of Engineers, that "the lines selected be approved, and that the Secretary place his approval both upon the report and the tracing submitted,"[2] such approval was given September 8, 1890 by the Acting Secretary of War.

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[1] Ann. Rep. of Chief of Engineers, Part 4, 1891, p. 2518.
[2] Id., p. 2519.

(d) Congressional direction for survey of "the Saint Louis River from Grassy Point in Saint Louis Bay to Fond du Lac, or the State line between Minnesota and Wisconsin." Resulting survey of main channel contended for by Wisconsin without protest from citizens of Duluth, report thereon, and discussion of same.

Within a fortnight, the signature of the President of the United States was affixed to a document, which contained a provision, more significant and important than any excerpt that has yet been presented from the long array of public documents in which we have found preserved the evidence of the unquestionable meaning of the terms of this boundary line. We refer to the river and harbor act of 1890, which provided:

> "That the Secretary of War is hereby directed, at his discretion, to cause examinations or surveys, or both, to be made, and the estimated cost of improvement to be estimated, at the following localities, to wit:
>
> * * *
>
> "The Saint Louis River from Grassy Point in Saint Louis Bay to Fond du Lac, or the State line between Minnesota and Wisconsin."[1]

It is evident that the Department of Engineers were thoroughly on the alert as to the interests and requirements of this vicinity. The day after the act became a law, the Chief of Engineers would seem to have sent a letter, directing a preliminary examination of "The St. Louis River, from Grassy Point, in St. Louis Bay, Minnesota, to Fond du Lac, or the State line between Minnesota and Wisconsin."[2]

Local interests, as ever, were awake and vigilant, and under date of September 25, the St. Louis Land Improvement Com-

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[1] Vol. 26, U. S. Stats. L., Ch. 907, Sec. 17, pp. 456, 460.

[2] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Ex. Doc. 58, p. 2; Rep. of Chief of Engineers, Pt. 3, 1892, p. 2148.

pany of Duluth, unquestionably familiar with the provisions of this project for a survey of the state line, referred to "the matter of a preliminary survey of the St. Louis River from Grassy Point to Fond du Lac, and the demands of commerce for the immediate dredging of the same," and referring to expected development of water power, predicted the "building of large manufacturing industries along the line of the navigable portions of the river."[1]

The New Duluth Land Company, not to be outdone, also called "attention to the necessity of dredging and improving the St. Louis Bay and St. Louis River to Fond du Lac," as did the Ironton Land Company, and the St. Louis Bay Land Company on the same date (September 29).[2]

These communications were all addressed to Major Quinn, with a view to procuring "an appropriation for dredging and improving said St. Louis Bay and river." On October 7, 1890, Major Quinn submitted his "preliminary report upon an examination of the St. Louis River, from Grassy Point, in St. Louis Bay, Minnesota, to Fond du Lac, or the State line between Minnesota and Wisconsin."[3] He found:

> "The length of the river channel between Grassy Point and Fond du Lac is 15 miles; the direct line distance is but 8 miles. There is very little fall to the river except for the upper mile of the course. The valley of the river is marshy, and contains numerous ponds, bayous, and cut-offs, which would require examination as well as the main channel, since such features require to be considered in any project for the improvement of the river."[4]

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[1] Id., Ex. Doc. 58, p. 3; Id., p. 2149.

[2] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Ex. Doc. 58, pp. 4–5; Rep. of Chief of Engineers, Pt. 3, 1892, pp. 2150–51.

[3] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Ex. Doc. 58, p. 2; Rep. of Chief of Engineers, Pt. 3, 1892, p. 2148.

[4] Id.

And confirming our view that testimony as to navigation prior to the late '80's and the early '90's is of little value or significance, he states:

> "I believe the river is worthy of improvement, although the present navigation is inconsiderable."

His communication went to the Detroit office, and the Colonel in charge forwarded it, with the endorsement—

> "that St. Louis River, from Grassy Point, in St. Louis Bay, Minnesota, to Fond du Lac, is worthy of improvement by the General Government, and I recommend that the within project for its survey and examination be approved."[1]

The Chief of Engineers concurred in the views of his subordinate, as appears from his annual report for the ensuing year, stating:

> "The required preliminary examination of *the St. Louis River, Minnesota, from Grassy Point in St. Louis Bay to Fond du Lac, or the State line between Minnesota and Wisconsin*, was made by the local engineer in charge, Major Quinn, and report thereon submitted through Col. O. M. Poe, Corps of Engineers, Division Engineer, Northwest Division. It is the opinion of Major Quinn, and of the Division Engineer, based upon the facts and reasons given, that this locality is worthy of improvement. This opinion being concurred in by me, Major Quinn was charged with its survey, the report on which will be submitted when received."[2]

Under the head, "Improvements which are being considered," the report of Captain Fisk, in charge of the harbors at Duluth and Superior, contains the statement:

> "The St. Louis River above Grassy Point has a depth of

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[1] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Ex. Doc. 58, p. 3; Rep. of Chief of Engineers, Pt. 3, 1892, p. 2149.

[2] Ann. Rep. of Chief of Engineers, Pt. 1, 1891, p. 317.

over 10 feet for several miles, and 8 feet to Fond du Lac Station.''[1]

This statement should be read in connection with the map for this year, already reproduced [2] and fully discussed. He further states:

''that the existence of a deep navigable channel to Fond du Lac is considered as essential to the success of any enterprises in this locality. No estimates * * * have been prepared, as the recent survey of this river with a view to its improvement has not been completed.''[3]

Under date of August 31, 1891, Mr. J. H. Darling, Assistant Engineer, reported to his superior—

''the completion of the survey of the St. Louis River from Grassy Point to Fond du Lac, made under your direction and in accordance with the act of Congress of September 19, 1890.''[4]

As to ''Soundings,'' it appears—

''These covered the *main channel* of the river beginning at a point (marked A on Sheet 1) near Grassy Point and proceeding up to the three-fourths mile above the village of Fond du Lac, this being a little above the foot of the rapids, and as far up as it was possible to use a sounding boat.

''The length of this *main river channel* is 13 miles. Soundings were also made in some of the secondary channels, also navigable, and separated from the main channel by islands. Soundings are plotted as taken, correcting only for error of lead line, and no reduction made to any particular plane or stage.''[5]

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[1] Ann. Rep. of Chief of Engineers, Pt. 4, 1891, p. 2491.

[2] This Brief, p. 189.

[3] Ann. Rep. of Chief of Engineers, Pt. 4, 1891, p. 2491.

[4] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Doc. 58, p. 6; Ann. Rep. of Chief of Engineers, Pt. 3, 1892, p. 2152.

[5] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Doc. 58, p. 7; Ann. Rep. of Chief of Engineers, Pt. 3, 1892, p. 2153.

It would seem that the soundings from "A, near Grassy Point, to B, near New Duluth," were made through the ice on eleven days in April.[1]

> "In making soundings through the ice, chained courses were run along the channel, of as great length as possible, and lines of soundings run across the channel at right angles to these courses, these lines being 200 feet apart over the shoaler portions of the river, where the depth was less than 16 feet, and from 400 to 800 feet apart on the deeper stretches. Soundings were taken 50 feet apart on the lines, all distances being chained off."[2]

These statements are readily interpreted by reference to Wisconsin's Exhibit 31–E, which is designated as "Sheet 1" and Wisconsin's Exhibit 31–F, which is designated as "Sheet 2," and consulting them we find that "A" is located almost due north from Fisherman's Island, northerly of the bar, or narrowing of the channel often referred to. "B" is found on "Sheet 2," in a northwesterly direction from the designation, "Flour Mill Foundation, Cooper Shops," on Exhibit 31–F.

But again we have the same complete absence of any soundings at all over the course so indispensable to Minnesota's claim, although the first portion of the cut-off channel is delineated as upon the earlier maps, and although it is specifically stated that soundings were made in some of the secondary channels. Had there been even a secondary channel connecting with the main channel from the tip of this pocket which stretched over toward Fisherman's Island, surely it is incredible that the same should have been a second time omitted. Had there been anything in the physical situation even remotely laying the foundation for the hypothesis that a channel extended, sufficiently important to challenge the claim of the pictured main channel to

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[1] Id.

[2] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Doc. 58, p. 8; Ann. Rep. of Chief of Engineers, Pt. 3, 1892, p. 2154.

being the boundary line, certainly an engineer charged with the specific duty of surveying the state line between two great states, a faithful and conscientious public servant as well, would never have omitted it!

The reason why the soundings in the vicinity of Fishermen's Island were omitted from the earlier map made by Mr. Parkinson and made by Mr. Darling, becomes apparent, we think, when examination is made of Wisconsin's Exhibit 41, which is a "Map of the Proposed Minnesota channel of the St. Louis River, District No. 3." Here we find that soundings omitted on the earlier maps have been supplied, and, beginning at the bend of the channel south of Grassy Point a line of soundings extending over toward Fisherman's Island, of which the following are fairly representative: 9.5, 9.5, 10.1, 9.7, 9., 9.1, 8.9, 8.7, 8.4, 8.9, 8.9, 8.4, 8.2, 7.8, 7.5, 7.3, the latter being about the center line of the new Minnesota channel as drawn, but lying directly to the west of this sounding we find a line of soundings beginning to the northeast of the island, leading over toward Grassy Point, which read, 4.4, 3.6, 3.9, and at a wider interval, 4.5, 2.7, 3.2. The line of soundings directly to the west of these are 5.0, 5.1, 3.8, 3., 3.1, 3.4. The same information and soundings appear upon Wisconsin's Exhibit 29.

Wisconsin's Exhibit 35 is a map of "Duluth and Superior Harbor, District No. 1, Districts Nos. 2 and 3." Map of Districts 2 and 3, dated December 16, 1896, shows proposed dredging of 20 foot channel, likewise supplies soundings in the vicinity of Fisherman's Island and confirms the evidence of Exhibit 41. Again we find, running from Fisherman's Island to Grassy Point, a line of soundings, 4., 4., 3., 4., and 4.

Wisconsin's Exhibit 32, labeled "Sheet No. 1, St. Louis Bay and River," which bears legend, "Shore line and soundings are from a survey made in the winter of '84 and '85," shows no soundings from the tip of pocket around Fisherman's Island to the channel of the St. Louis River.

Wisconsin's Exhibit 31–I, "Map of Duluth side of the Harbor at Duluth, Minn. and Superior, Wis." August 21, 1899, presumably showing characteristic soundings, shows two soundings of 4 feet to the northeast of Fisherman's Island.

Wisconsin's Exhibit 31–H, being similar map for Superior side of harbor, dated Dec. 12, 1898, shows two soundings of four feet each, as on 31–I.

No evidence was introduced that any material had been deposited over this area as the result of the dredging of 1893 and nothing in any way suggests but that conditions as shown upon the maps, where these shallow soundings appear, were continuously the same from the first survey made in 1884 and 1885. On the contrary, the inference is strong that all of the material was disposed of outside the "Entry," for we find the statement of the engineer in charge:

> "The disposal of the dredgings would be somewhat difficult, as it would probably be necessary to tow to the lake for a dumping ground or rehandle it."[1]

That these soundings in 1891 were taken and the map made by no mere newcomer making a superficial observation of conditions with which he was unfamiliar, appears from the fact that at the time of making his report, Mr. Darling had observed local conditions for seven years preceding, as appears from his report.[2]

His familiarity with the waters is confirmed by his oral testimony, which fortunately was taken, and admirably supplements his contemporary report. It appears that he resided at Duluth beginning in 1884, and had been familiar with the waters of the St. Louis River above Grassy Point during the entire period of

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[1] Ann. Rep. of Chief of Engineers, Pt. 3, 1892, p. 2151.

[2] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Doc. 58, p. 8; Ann. Rep. of Chief of Engineers, Pt. 3, 1892, p. 2154.

his residence in Duluth,[1] and that originally, "before the improved channel was made," there was but one deep channel between Big Island and the Minnesota shore. This channel was "continuous from Grassy Point up," and from 1884 and 1885, it "remained unchanged in its position and location during all the time" he had been there, "up to the time of the construction of the new channel." He thought, using almost the language of the reports,—

> "the draught up there was limited, before the shoals were removed, was limited to perhaps eight or ten feet."[2]

He indicated the course of this single channel, which "the boats of larger draught usually followed in conducting commerce and navigation up the river * * * the only channel between Big Island and the Minnesota shore * * * that boats of any considerable depth could take," upon Wisconsin's Exhibit 1, marking the same in red ink with the letter "H,"[3] and testified that this channel "had the usual characteristics of a river," and he had always regarded it as a river.[4]

Mr. Darling testified to his familiarity with the Allen map, which was based on the survey of Mr. Parkinson in 1884 and 1885, and upon wheih survey his own map was based in part. He testified in detail[5] to the course of the original channel, which corresponds to that which he had delineated some twenty-seven years earlier on the maps in evidence.[6] He testified further that at the time this map was made,[7] it was at the lowest stage of water; that boats of small or slight draught might use the cut-

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[1] Record p. 596.
[2] Record p. 597.
[3] Record p. 598.
[4] Record, p. 600.
[5] Record, pp. 601–3.
[6] Wisconsin's Exhibits 31–E and 31–F.
[7] Wisconsin's Exhibit 31–E.

off channel, and recorded the difficulty he had known "a vessel drawing six feet" to experience in going over "a shallow portion of that channel down near Armstrong Island."[1] To take the so-called cut-off channel, they "took the main channel up for a distance past the end of Grassy Point, just how far I don't remember, but before we got opposite Armstrong Island, considerably before that we turned off and passed south of Armstrong Island."[2]

He delineated his conception of the cut-off channel in black ink upon Wisconsin's Exhibit. He indicated two reasons for not taking a course such as Minnesota suggests: "because the channel is not so well defined for one thing; it is not as deep for another," while the distance saved would only be "somewhere near three hundred yards or nine hundred feet," indicating that there was very little incentive or occasion for attempting such a hypothetical course.[3] Through the ensuing pages, he answered many hypothetical questions based on purely suppositious facts in a frank, straightforward manner, but was equally positive in his recollection:

> "in the time I was acquainted with the river and was working there, along in the '90's, I found what was shallower water than that exhibit shows. * * * in the vicinity of that bar near the red line, that first line to the westward of Armstrong Island, along in the vicinity of that there was a shallow bank on each side of the channel which was hard to get across with a moderate size launch, shallower than what is indicated there."[4]

A view, of course, in striking accord with the contemporary record which he made of the facts found, and which has become an official record of the United States Department of Engineers.

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[1] Record pp. 606–7.
[2] Record p. 610.
[3] Record p. 612.
[4] Record pp. 613–614.

As a further reason why vessels would not take the Minnesota channel, he reiterated that in view of the small possible saving of distance,

> "they wouldn't take the chances or they wouldn't care to go into shallower water for instance for the sake of a thousand feet only."[1]

He emphasized the greater ease of navigation, because—

> "the main channel runs not very far from Grassy Point, and Grassy Point itself forms kind of a landmark by keeping about so far away from it."[2]

And again, it appears that this official whose duties had been those of "a sort of superintendent or supervisor in the preparation of plans for improvements," and who had "looked after the execution of improvements in many cases"[3] for a period of twenty-nine years, "wasn't aware of the use of this other channel that you have been speaking of."[4] And across the course of Minnesota's main navigated and navigable channel he remembered "running onto a shallow margin of the channel in that locality which would prevent a vessel crossing it of any depth, I should think it would be not more than three feet of water in that time I mention on that bar."[5] He remembered distinctly finding a shallow margin to the channel," which he could not "exactly locate the extent of," but remembered "that shallow water very clearly. I know that a vessel drawing six feet couldn't cross."[6] He frankly conceded there might be deeper water in the vicinity which they could cross.

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[1] Record p. 615.
[2] Record p. 615.
[3] Record, p. 596.
[4] Record, p. 617.
[5] Record, p. 619.
[6] Record, p. 620.

We may note that another of Wisconsin's witnesses testified to having assisted Mr. Darling in making these soundings.[1]

The report of Mr. Darling's superior was made November 10, 1891—

> "on the survey of 'St. Louis River from Grassy Point, in St. Louis Bay, to Fond du Lac, or the State line between Minnesota and Wisconsin.' "[2]

It embodies this description:

> "The portion of the river susceptible of improvement terminates about 1 mile above Fond du Lac, the village being 14½ miles by water above the Grassy Point Railroad bridge, and 20¼ miles from the Duluth canal. About 4½ miles above Fond du Lac is the foot of the Dalles, which extend about 4 miles up the river, and in which the fall is 480 feet.
>
> "From the natural pool at the boom just below Fond du Lac down to Grassy Point there is practically slackwater, and as the river carries little or no sediment any improvements made would be practically permanent. As will be seen from the chart, this part of the river consists of a succession of long, deep pools (usually with 18 feet or more of water in them) separated by comparatively short bars, with minimum depths of 7½ to 12 feet over them."[3]

On November 23, 1891, the Chief of Engineers transmitted to the Secretary of War these reports—

> "on survey of 'the St. Louis River, from Grassy Point, in St. Louis Bay, to Fond du Lac, or the State line between Minnesota and Wisconsin,' made in compliance with provisions of river and harbor act, approved September 19, 1890."[4]

Apparently the matter was deemed of such importance that it was not permitted to await publication in the regular order, in

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[1] Testimony of John Ojibway, Record pp. 682–3.

[2] Ann. Rep. of Chief of Engineers, Part 3, 1892, p. 2151.

[3] Ann. Rep. of Chief of Engineers, Part 3, 1892, p. 2151.

[4] House Ex. Docs., 1st Sess., 52d Cong., 1891–92, Vol. 33, Ex. Doc. 58, p. 1.

the Annual Reports of the Engineers, but on December 8, 1891, the Acting Secretary of War transmitted to the House of Representatives this information on the "examination and survey of St. Louis River, from Grassy Point, in St. Louis Bay, to Fond du Lac, or the State line between Minnesota and Wisconsin,"[1] which on January 7, 1892 was referred to the Committee on Rivers and Harbors, and ordered to be printed.

The Senate appears to have been equally interested with the House, and while the source of their information is not apparent, we find that the Committee on Commerce reported on the river and harbor bill May 13, 1892, calling the attention of that body to the fact that—

> "In addition to these works, which at some not distant day must receive the attention of Congress, another channel of commercial development may be found worthy of consideration in this locality. The St. Louis River above Grassy Point has a depth of over 10 feet for several miles and 8 feet to Fond du Lac Station. Four or 5 feet can be carried up to the foot of the rapids, from which point up the river has a fall of about 600 feet in less than 7 miles."[2]

Specific mention of the importance of these waters as the state line was not made in this Senate Report. We may assume, however, that the House Documents were equally available to the members of the Senate, and we find in another report of the Board of Engineers placed before the Senate on April 18, emphasis of the fact that—

> "The Saint Louis River, in this locality, forms the boundary between the states of Minnesota and Wisconsin."[3]

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[1] Id.

[2] Senate Reports, 1st Sess., 52d Cong., 1891-92, Vol. 4, Rep. No. 666, p. 144.

[3] Senate Executive Documents, 1st Session, 52d Cong., 1891-92, Vol. 5, Ex. Doc. 80, p. 6.

Note is likewise made that "the rivalry between these cities is intense and bitter." [1]

This phase of the matter, as we have indicated, the court must have constantly in mind in considering the likelihood or probability that a mislocation of the state line would have gone long unchallenged or uncriticized.

(e) Following survey of "State line," Congress provided "forty-five thousand dollars" for use "in the channel of Saint Louis River above Grassy Point." Expenditure of this and additional amounts without objection in improvement of channel so surveyed as the state line.

Bearing in mind, then, the continuous iteration, reiteration, and emphasis connecting this survey with the "State line between Wisconsin and Minnesota," and the utter absence of objection to such designation and location by the partisans of either of these bitterly rival communities, we approach the enactment on July 3, 1892 of the river and harbor bill of that year, which contains the proviso that—

> "forty-five thousand dollars, or so much thereof as may be necessary, may be used, in the discretion of the Secretary of War, *in the channel of Saint Louis River above Grassy Point.*" [2]

The year that followed is of course the one in which it is most important that a clear and vivid picture of conditions shall come before the court. Note is made in the Engineer's Reports that—

> "The river and harbor act of July 13, 1892, authorized the expenditure of $45,000 of the amount appropriated for this harbor in improving the channel of St. Louis River above Grassy Point." [3]

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[1] Id.

[2] Vol. 27, U. S. Stat. L., 1st Sess., 52d Cong., Ch. 158, p. 95.

[3] Ann. Rep. of Chief of Engineers, Part I, 1893, p. 337.

And —

> "The work contracted for under the current appropriation to improve the St. Louis River above Grassy Point is expected to give in that river a continuous navigable channel up to Ironton, having a least depth of 16 feet and a minimum width of 90 feet, with long reaches of greater width and depth."[1]

The dual importance of this statement is manifest at once. The Secretary of War and the Department of Engineers thus give their practical construction to the meaning of the phrase in the original boundary act by proceeding to expend the appropriation in improving the main channel of the St. Louis River, specifically denominated as "the state line between Grassy Point and Fond du Lac," and the signficance of their action lies in the fact that the money was spent where Minnesota now says there was at that time neither river, nor river channel. The officer on the ground stated in the language of the Senate Committee:

> "The St. Louis River above Grassy Point has a depth of over 10 feet for several miles and 8 feet to Fond du Lac Station. * * *
>
> "From Grassy Point for several miles up the river there are pools of from 500 to several thousand feet in length, having widths of over 200 feet and depths of from 17 to 27 feet. Between the pools are shoaler reaches of only 10 feet depth."[2]

He notes "the discretion of the Secretary of War, in improving the channel of the St. Louis River above Grassy Point," and the amount "allotted for improving *this* channel," and it is stated:

> "The work to be done with this $22,500 is to dredge across the shoal places."[3]

This report should be read in connection with a map found in that volume,[4] which partially reproduces the area mapped in Ex-

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[1] Id., p. 338.
[2] Ann. Rep. of Chief of Engineers, Pt. 4, 1893, p. 2659.
[3] Id.
[4] Id., op. p. 2659.

hibits 31–E and 31–F, and shows "the St. Louis River channel," one such channel, and only one.

(f) Continuance of general understanding as to location of main channel of St. Louis River, or the State line, as illustrated by reports from 1893 to 1904.

The report for the following year notes the appropriation for "improving the channel of St. Louis River above Grassy Point," and the carrying out of a contract for "dredging out the shoal places between pools in the St. Louis River as far as to Ironton."[1] The engineer in charge again used the descriptive language of the previous report, that "the St. Louis River above Grassy Point has a depth of over 10 feet for several miles and 8 feet to Fond du Lac Station."[2] And after continuing in the language of the previous report, notation is made that—

> "some 107,143 cubic yards were dredged through the shoal places between pools. Much of the material removed was sawdust, the tailings of the lumber mills on the upper river. The dredging gave the bars a width of 95 to 100 feet and a depth of 17 feet, thus securing good 16-foot navigation up to Ironton, 4½ miles above Grassy Point."[3]

And discussing the full cost of the channel, reference is made to the "report of survey of St. Louis River"[4] in 1892, which was the report on the survey of "St. Louis River, from Grassy Point, in St. Louis Bay, to Fond du Lac, or the State line between Minnesota and Wisconsin."[5]

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[1] Ann. Rep. of Chief of Engineers, Pt. 1, 1894, p. 309.
[2] Ann. Rep. of Chief of Engineers, Pt. 4, 1894, p. 2015.
[3] Id.
[4] Id.
[5] House Ex. Documents, 1st Sess., 52d Cong., 1891–92, Vol. 33, Ex. Doc. 58, p. 1.

The dredging having thus carried the channel to Ironton, we find in the ensuing year that property owners of that subdivision, under date of July 26, 1894, requested the establishment of a dock line by the government.[1] Major Sears, who received this petition, discussed the matter at some length, and referring to the harbor line of 1890, states:

> "The lines thus established become essentially parallel as they approach Grassy Point, follow the natural channel very closely, and terminate above Grassy Point on the prolongation of Sixth avenue west in West Duluth. I am of the opinion that the establishment of harbor lines for the St. Louis River should be accompanied by a change in those already established at the upper end of St. Louis Bay and around and above Grassy Point."[2]

His recommendation and the tracing accompanying his report were approved December 5, 1894.[3]

While a copy of the blue print is omitted in the report, we find it introduced in evidence as Wisconsin's Exhibit 40, and there again we find the old harbor line delineated, and the main channel lying between the established harbor lines, bearing out the statement of Major Sears that these lines follow the natural channel very closely.

Following the date of the petition for the harbor line, and before its establishment, the river and harbor bill of August 18, 1894, had provided an appropriation for "the channel on the north shore of Saint Louis Bay and the Saint Louis River, seventy-five thousand dollars, of which an amount not to exceed twenty-five thousand dollars, in the discretion of the Secretary of

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[1] House Documents, Vol. 7, No. 2, Rep. of Sec'y of War, Vol. 2, Pt. 4, Engineers, 54th Cong., 1st Sess., 1895–96. p. 2590.

[2] Id., p. 2588.

[3] Id., p. 2590.

War, may be expended in the channel of Saint Louis River above Grassy Point."[1]

In the report of the next year, after noting that originally, "on the landlocked bays of Superior and St. Louis, * * * there was no water over 8 feet in depth except in the St. Louis River," thus recognizing the continuity of the St. Louis River through these bays, and enumerating among the general projects, "the deepening of the St. Louis River at shoal places from Grassy Point to the head of navigation at Fond du Lac,"[2] notation is made of these amounts which "could be expended in the channel of the St. Louis River above Grassy Point. * * * Work was begun October, 1894, and finished August 13, 1895, and resulted in giving a good 16-foot navigation to New Duluth."[3]

The report of the Chief of Engineers for that year employs the same definite terminology as if referring to one single, definite, and defined channel which could not be misunderstood, and which answering the call of this description, speaks of "the channel of St. Louis River above Grassy Point."[4]

The report for 1897 contains nothing of interest beyond the notation that by act of June 3, 1896, the Duluth Canal, Wisconsin Entrance, Superior Bay, Allouez Bay, St. Louis Bay, and St. Louis River were incorporated in one project, as the Duluth-Superior Harbor. The practical completion of previous projects "upon the St. Louis River to New Duluth" is noted.[5] Substantially the same language appears in the report for the

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[1] Ch. 299, 2nd Sess., 53d Cong., Vol. 28, U. S. Stat. L., p. 345.

[2] House Documents, Vol. 6, No. 2, Rep. of Sec'y of War, Vol. 2, Pt. 4, Engineers, 54th Cong., 2d Sess., 1896–97, p. 2339.

[3] Id., pp. 2340–41.

[4] House Docs., Vol. 3, No. 2, Rep. of Sec'y of War, Vol. 2, Pt. 1, Engineers, 54th Cong., 2d Sess., 1896–97, p. 302.

[5] House Documents, Vol. 5, No. 2, Rep. of War Dept., 1897, Engineers, Pt. 3, 55th Cong., 2d Sess., 1897—98, p. 2592.

next year, except that such practical completion of the project is noted July 1, 1897,[1] and is again repeated in the report for 1899,[2] and in the report for 1900.[3] This latter report, however, notes the acquisition of the island which Mr. Stuntz had surveyed in 1893, and it is said of this island:

> "The award for the marshy island in the St. Louis River will be accepted at a valuation of something over $2,100,"[4]

the court bearing in mind, of course, that this is located at the very seat of the controversy, where counsel for Minnesota contends so laboriously that there is no river.

The same volume contains a discussion of the new harbor lines proposed and established.[5] It appears that the change was made after "public hearings for the consideration and discussion of the proposed lines," and that the lines were "practically entirely satisfactory to the parties interested as riparian owners," and the Acting Chief of Engineers authorized their approval, because "the establishment of harbor lines authorizes no appropriation of riparian property, but simply fixes the limits to which piers and wharves may be built."[6]

This map, whose omission is noted in the report, appears in evidence as Wisconsin's Exhibit 31–I, with the approval of the Secretary of War, under date of November 17, 1899, shown thereon. An examination of this map, which was undoubtedly exhibited at the hearing which ultimately led to its adoption, shows plainly

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[1] House Docs., Vol. 6, No. 2, Rep. of War Dept., 1898, Engineers, Pt. 3, 55th Cong., 3d Sess., 1898–99, p. 2223.

[2] House Docs., Vol. 10, No. 2, Rep. of War Dept., 1899, Engineers, Pt. 3, 56th Cong., 1st Sess., 1899–1900, p. 2611.

[3] House Docs., Vol. 19, No. 2, Rep. of War Dept., 1900, Engineers, Pt. 5, 56th Cong., 2d Sess., 1900–1901, p. 3554.

[4] Id., p. 3555.

[5] Id., pp. 3642–47.

[6] House Docs., Vol. 19, No. 2, Rep. of War Dept. 1900, Engineers, Pt. 5, 56th Cong., 2d Sess., 1900–1901, p. 3644.

delineated, "St. Louis River channel" below Big Island, and likewise, "St. Louis River channel" to the west of Big Island.

In the list of established triangulation stations and other established points, in the upper left-hand corner of this harbor map, we find the designation of a triangulation station, "75 St. Louis River," "76 St. Louis River," "77 St. Louis River," "130 St. Louis River," "134 St. Louis River," "6a St. Louis River," "137 St. Louis River," "138 St. Louis River." Turning to the harbor map, we find that the point 75, thus located as a station on the St. Louis River, is on the right of way of the St. Paul and Duluth Railroad; 77 is on the Wisconsin side, directly opposite Grassy Point; 76 is on the Minnesota side almost due north from Fisherman's Island; 6a is in Ironton opposite Big Island; 134 is located on the Minnesota mainland opposite Tallas Island; 130 is located on the inner face of Pokegama Point; 138 on Big Island, and 137 on the Minnesota mainland, in Ironton.

It will be noted that in the lower left-hand corner, where the description of harbor lines is given, that point 52 referred to is located at approximately the center of the eastern extremity of Grassy Point, and that having described the harbor line to this point, we find in the margin the designation, "St. Louis River," while the course is described from 52; thence to point 54; thence to 56, thence to 58, and thence to 60, all of which lie below the head of Big Island and where Minnesota argues there is no river.

In the report for 1900, describing the north channel, St. Louis Bay is spoken of as "extending to the natural 20-foot depth of the St. Louis River channel at St. Paul and Duluth Bridge,"[1] this point being located, of course, well to the northeast of Grassy Point. A new designation appears,—"Minnesota Channel, St. Louis River," described as a new channel

[1] House Documents, Vol. 19, No. 2, Rep. of War Dept., 1900, Engineers, Pt. 5, 56th Cong., 2d Sess., 1900–1901, p. 3572.

leading from the St. Louis Bay channel at this bridge, "in front of the harbor lines on Minnesota or Duluth side of St. Louis River."[1]

In the report for 1901, note is made that "the award * * * for the marshy island in the St. Louis River * * * will be accepted," and of the number of yards excavated "out of the St. Louis River above the St. Paul and Duluth Railway Bridge," involving the area under consideration.[2]

From the report for 1902, we learn that "the award * * * for the marshy island in the St. Louis River * * * was accepted."[3]

Further on, we learn that—

> "The original project for deepening and widening *the natural channel*, St. Louis River from Grassy Point to the outlet of Spirit Lake has been abandoned, and the modified project provides for a new channel *through the flats of the river* adjacent to the harbor line on the Minnesota side as approved by the Secretary of War November 17, 1899, extending from the Northern Pacific Railway Bridge at Grassy Point to natural channel of the river at north end of Spirit Lake."[4]

And the beginning of the dredging of the present "Minnesota channel, St. Louis River" is noted.[5]

The year following, the excavation "out of St. Louis River above the Northern Pacific Railway bridge at Grassy Point"

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[1] Id., p. 3575.

[2] House Documents, Vol. 15, No. 2, Rep. of War Dept. 1901, Engineers, Pt. 4, 57th Cong., 1st Sess., 1901–1902, p. 2829.

[3] House Documents, Vol. 7, No. 2, Rep. of War Dept., 1902, Vol. 4, Engineers, Pt. 3, 57th Cong., 2d Sess., 1902–1903, p. 2005.

[4] House Documents, Vol. 7, No. 2, Rep. of War Dept., 1902, Vol. 4, Engineers, Pt. 3, 57th Cong., 2d Sess., 1902–1903. p. 2019.

[5] Id., p. 2020.

is noted again,[1] as well as soundings taken in "the flats of St. Louis River from Grassy Point to Spirit Lake * * * and the natural channels of the St. Louis River from Grassy Point to the foot of the rapids above Fond du Lac."[2]

Naturally, with the consolidation of all of the various projects into the harbor of Duluth and Superior, there would be little or no occasion for reference to the St. Louis River as a separate entity, but we find in the decision of the Board of Engineers, called upon to consider the further improvement of the St. Louis River, the statement:

> "*The St. Louis River, forming the harbor of Duluth, Minn., has been improved to a depth of 20 feet* for a distance of 10 miles from the Duluth Ship Canal. Thence, ascending the stream, there exists a 12-foot channel to New Duluth, 15 miles from the ship canal. From New Duluth to Fond du Lac, 3⅜ miles, the available depth is 7 feet, and from Fond du Lac to a point nearly a mile above, where are located several brownstone quarries, there is an available depth of 4 feet in a narrow channel."[3]

(g) Completion of new channel according to harbor lines of 1899. Abandonment of the original channel of the St. Louis River, and notice thereof, with map showing boundary line between the states, given to governors of Wisconsin and Minnesota by direction of Chief of Engineers.

On April 1, 1903, the Captain of Engineers in charge of the harbor addressed a letter in duplicate to the Governors of Wis-

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[1] House Documents, Vol. 11, No. 2, Rep. of War Dept., 1903, Vol. 10, Engineers, Pt. 2, 58th Cong., 2d Sess., 1903–1904, p. 1794.

[2] Id., pp. 1795–96.

[3] House Documents, Vol. 8, No. 2, Rep. of War Dept., 1904, Vol. 7, Engineers, Pt. 3, 58th Cong., 3d Sess., 1904–1905, p. 2807; House Documents, Vol. 46, 58th Cong., 2d Sess., 1903–1904, Doc. 215, p. 5.

consin and of Minnesota, respectively, stating to each of the executives:

"In compliance with instructions received from the chief of Engineers, U. S. Army, I have the honor to advise you of the conditions existing along the lower reaches of the St. Louis River consequent upon operations conducted by the United States for the improvement of Duluth–Superior Harbor, and the channels leading thereto.

"As you are doubtless aware, the original channel of the St. Louis River was the boundary line between the States of Minnesota and Wisconsin, which boundary line is believed to coincide with the full red line shown on the accompanying map. On this map are also shown the new channels in the river and harbor constructed in pursuance of a project approved by Congress, and from funds provided for that purpose in the annual appropriations bills. These channels have all been completed for their full width; that between Grassy Point and Big Island, which was not completed at the time the map was issued, being shown by full black lines. The harbor lines are shown by fine broken lines composed of dots and dashes, alternatively. These harbor lines were approved on November 17, 1899, after a widely advertised public hearing. No objection to proposed location of these lines along the St. Louis River was received from the citizens of the locality. By the establishment of these harbor lines the United States, so far as its own interests are concerned, gives the riparian owners the right to fill out for the full distance from the shore to the harbor line, if they so desire.

"If this is done, you will note that in the portion of the St. Louis River above Grassy Point the old channel of the St. Louis River may be completely filled in several places. The artificial accretion thus gained would lie, in some instances, both in the States of Minnesota and Wisconsin. As the new channel is an artificial construction, it is not thought that its effect will be to change the boundary line between the states of Minnesota and Wisconsin following the rule that changes by avulsion do not operate to change state boundaries. It is evident that when in the natural growth of the cities of Duluth and Superior the areas in question between the harbor lines and the adjacent shores are filled in, and buildings erected upon them, the very

irregular boundary line between the two states will be practically obliterated and great confusion must ensue. Citizens of both cities have already been agitating the question, and some of them have requested this office to inaugurate proceedings looking to the establishment of a new boundary line in this vicinity which would conform to the new and permanent channels recently constructed, and would at the same time be satisfactory to the citizens of the respective states affected.

"This is a question which the War Department is without jurisdiction to decide, and it is therefore deemed advisable to inform you of the changes which have been made in the St. Louis River, to the end that the question of boundary (if one has arisen, or should arise in future) may be determined in the manner prescribed in the state constitution."[1]

It appears from the record that Wisconsin's Exhibit 43 is a copy of the map which was referred to and forwarded to the Governors of the respective states in April, 1903, and as indicating the constancy with which the character of the waters had been borne in mind, we find that upon Wisconsin's Exhibit 31–J, which would seem to have been a map identical with Exhibit 43, is delineated the conception of the Department of Engineers as to the location of the state line between Wisconsin and Minnesota.

This letter so written was not, as is graciously suggested by counsel for Minnesota, inspired by some Wisconsin adherent, but was written at the suggestion of the Chief of Engineers; and we have labored to little purpose if it has not been demonstrated that it concurred with the absolutely uniform, unvarying, undeviating, understanding that had obtained for twenty years preceding, as to the location of the state line between Wisconsin and Minnesota, beginning with the survey of Mr. Parkinson, and continuing through the survey authorized by Congress, and ending with this conscientious effort to procure an adjustment of the boundary, before the condition so accurately predicted in the

[1] Record pp. 1049–50.

letter should have arisen. And it was upon this position that the Wisconsin committee of the Joint Commission, which held sessions in 1911 and 1912, squarely planted itself, contending then, as we do now,—

> "that the boundary line between the States of Wisconsin and Minnesota through the St. Louis River, is identical with the center of the main channel of said River, as the same is indicated on maps and records of the United States War Department, made prior to the construction of Artificial channels in said River."[1]

Nor do we think that at that time the Minnesota committee took a position inconsistent with this view, the very essence of their position being that the waters constituted a part of the lake, and were not river, on the theory that the constitutional boundary was "but a general outline," that—

> "the mouth of the river is not fixed and from the very nature of things there was no attempt made at detail in the description of the constitutional boundary."[2]

So that, as we view it, the sole basis of the committee's claim was that the waters being lake, not river, the channel lay through their middle. There is indeed, we think, a tacit recognition of where the boundary lay, were it once established, as we think it now is, beyond all peradventure, that the mouth of the river lay between Wisconsin and Minnesota Points, and that the river itself extends clear to the "Entry," because it is said:

> "*The sinuous course of deepest soundings,* which was impracticable for ship course in modern commerce, has been improved by a better course less sinuous, but curving with the general course of the boundary waters and greatly facilitating commerce thereon."[3]

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[1] Record p. 1044.
[2] Record, p. 1045.
[3] Id.

And the desire was then expressed for a settlement of the matter, not upon the basis of strict legal and constitutional right on which this suit must be determined, but on a "broad and practicable basis, so as to preserve to each state and the citizens thereof, access to the navigable and navigated waters," and it is this supposedly practical basis, involving mutual and equitable concessions, that was urged.

And it is this same desire to settle the matter "on a broad and practicable basis" that infuses the argument of counsel for Minnesota. We find that the court is asked to accept their solution, because it "gives each State equal rights to reach navigation, injures no one and solves this question in the simplest and most complete way and solves it RIGHT."[1] And the emphasis is placed upon a settlement "that will do equity and justice and result in the least confusion."[2]

This court, however, has aptly disposed of this argument in an earlier decision, in *Indiana v. Kentucky*, 136 U. S. 479, 509, saying:

> "But the question here is not, as if the point were raised to-day for the first time, to what State the tract, from its situation, would now be assigned * * *. Undoubtedly, in the present condition of the tract, it would be more convenient for the State of Indiana if the main river were held to be the proper boundary between the two States. That, however, is a matter for arrangement and settlement between the States themselves, with the consent of Congress."

And so here, the mere fact that their proposed channel would be more convenient, and result in less confusion if now adopted as the state line, is a consideration quite beside the point.

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[1] Minnesota brief, p. 85.
[2] Id., p. 282.

5. *Discussion of Minnesota's effort to rebut the presumption as to the correct location of the main channel of the St. Louis River and the State line by the Department of Engineers, and to repudiate the action of her legislature in establishing a dock line along such channel.*

Here then we think the consideration of this problem by the court may well, and we think perhaps will, end. For thus far all has been of an assured certainty. Beginning with the survey of General Meade in 1861, which clearly delineated the deepest channel of the St. Louis River, and continuing down without variation or change, the Department of Engineers left a uniform record locating this deepest channel where he found it, and identifying the same with the main channel, or the state line through the waters in question. And for their dispassionate scientific accuracy, we are asked to substitute the jumbled impressions of many witnesses as to what they did or saw, from a quarter to a half century antecedent to the making up of the record before the court.

a. Oral testimony wholly fails to establish preponderance of navigation through Minnesota channel from point B to C over navigation in main channel of river, as located by engineers.

As was well said in *Missouri v. Kentucky,* 11 Wall. 395, 403:

> "In a controversy of this nature, where state pride is more or less involved, it is hardly to be expected that the witnesses would all agree in their testimony."

If such expectation of agreement were ever entertained, the testimony in the present case clearly disappointed it, for not only were the witnesses of Wisconsin unable to agree with those of Minnesota, but scarcely any two of Minnesota's witnesses were

able to agree with one another. Much time and effort, however, were devoted to the presentation of oral evidence in this action. Should the court conclude to examine the same, we desire, by way of lightening its labors, to present our detailed interpretation of just what that oral testimony showed.

(a) John G. Howard.

Coming, then, to the consideration of this testimony, for the purpose of convenience, in the order in which it was introduced, we find that Minnesota's first witness, whose testimony occupies approximately thirty-eight pages of the record, simmers down to this: that the channel most used during all the time was the so-called cut-off channel on the south side of Big Island,[1] and in direct contradiction of practically every other witness and the undisputed physical facts, he testified that this channel "was shorter and *just as deep water*,"[2] and indeed, as we understand his testimony, went to the length of asserting, the obvious physical impossibility that boats drawing 10 to 12 feet took the cut-off channel.[3]

Confirming the slight extent of navigation prior to 1886, and the slight extent of his knowledge of any navigation prior to that time, we find the following direct questions and answers:

> "Q. So that so far as you know of steamboat navigation during that time, your knowledge is confined to your own boat, which made six or eight trips a season up as far as Pokegama Bay?
>
> "A. In the early days, yes, sir.
>
> "Q. Now, you say in an early day. Fix the years that you have in mind when you make that statement.
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> "A. Well, say up to 1885."[4]

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[1] R. p. 50; Minnesota brief, p. 96.
[2] R. p. 51; Minnesota brief, p. 97.
[3] R. pp. 70–71, fol. 50.
[4] R. pp. 63–64, fol. 39.

He testified to starting the excursion business in 1886, and continued—

> "Well, for several years. I don't know how many years we continued that; three or four, I guess."[1]

And "in later years," he testified as to the channel that they "traveled it pretty near every day."[2]

And during these years, he testified to running the Steamer Emerald, which drew "about seven feet of water."[3]

And notwithstanding the survey of the river by Mr. Parkinson the year preceding, and the establishment of the Minnesota dock line on the Milford channel, described by the Minnesota legislature as the "eight (8) feet curve of depth of the natural channel of the St. Louis River;"[4] and notwithstanding the adoption of this dock line by the federal government pursuant to the petition of the Duluth Chamber of Commerce; and after "the views of the representatives of the several localities involved were invited;"[5] and after the Board of Engineers had made a physical inspection of the dock line in company with the president of the Chamber of Commerce of Duluth, and the secretary of the Chamber of Commerce of Superior,—all events which transpired during the time that he states that he was actively and continuously navigating these waters, he testified very positively that he had never gone up the main channel, or known a boat to take that channel, the reason being that "it was impossible to get through from the channel," on account of the so-called bar opposite Fishermen's Island.[6] This statement contradicts the obvious inference from the map that, if any boat ever took the course contended for by Minnesota, they necessarily crossed this bar in either event,

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[1] R. p. 66, fol. 43.
[2] R. p. 65, fol. 41.
[3] R. p. 72, fol. 53.
[4] Special Laws of Minnesota, 1887, ch. 316, p. 916.
[5] Rep. of Chief of Engineers, 1891, Part 4, p. 2516.
[6] R. p. 51, fol. 19; Minnesota brief, pp. 97, 99.

or at least found water just as shallow or shallower which is in effect conceded in the Minnesota brief,[1] and was the direct and very positive testimony of one of Minnesota's witnesses, Captain Jeffrey, who testified that it—

> "didn't make any difference what channel you go over, you had to go past that flat place if you went north of the little island."[2]

And such is the character of the testimony, of which counsel for Minnesota blithely say:

> "it only emphasizes the exact knowledge that Mr. Howard had of these waters in the early days and the accuracy of the man's mind and memory in testifying."[3]

Confronted with the fact that the Meade map showed this Milford or main channel as being the deepest channel, he said, "I see it on the map there," and asked as to doubting its correctness, said, "I have nothing to say on that. I suppose it is all right."[4]

While he testified positively enough on direct examination that the state line shown on Minnesota's Exhibit 2 "was considered by everybody to be the boundary line between the two states,"[5] this question on cross examination, "You never knew of anybody going by that for the State line, did you?" resulted, however, in the complete evaporation of his assurance on this point. He answered: "No sir, I never thought anything about the State line."[6] And this illuminating question and answer are found:

> "Q. You have just now testified that you didn't know of it being recognized as a State line and you don't know, do you?
>
> "A. No, I don't."[7]

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[1] Minnesota brief, p. 134.
[2] R. p. 999, fol. 1563.
[3] Minn. brief, p. 99.
[4] R. p. 80, fol. 64.
[5] R. p. 56; fol. 27.
[6] R. p. 77; fol. 61.
[7] R. p. 80; fol. 65.

(b) Leonidas Merritt.

Leonidas Merritt, the next witness for Minnesota, likewise testified that all the old passenger steamers took the so-called cut-off channel.[1] And we presume, reasooning from the fact that he considered the waters a portion of the lake, he testified that the line on Minnesota's Exhibit 9 represented the old idea of what the state line was, which he considered the common understanding, "absolutely."[2]

Apart, however, from Mr. Merritt's prepossession for the theory that these waters were a part of the lake and not a river, his testimony, we think, is most decidedly favorable to Wisconsin's point of view. Negativing the possibility of any avulsion or violent change, he testified on cross examination that the physical outlines of the water were substantially the same then as in 1856;[3] but we think he is equally clear in sustaining the theory of a gradual shallowing of the waters, for he states, "There was more water in the St. Louis sixty years ago on an average than there is now."[4] And again, referring to these waters, he states—

> "that Grassy Point bar was thrown up there and the debris settled in that upper bay. That was deep water one time up in there, you know, and it has been filled up by silt that came down the river. * * * "Where there is shallow water. Was all deep at one time, say a hundred and fifty years ago,"

his theory being that this proved it "a bay * * * because the silt will settle where it meets the dead water."[5] Shown the Meade map, and tracing the course of what Wisconsin contends to have been the main channel of the river, he stated that this was the "deepest water in the bay seems to be, from that map," and explaining its formation said:

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[1] R. p. 85, fol. 73.
[2] R. p. 87, fol. 76.
[3] R. p. 101, fol. 100.
[4] R. p. 102, fol. 102.
[5] R. p. 103, fol. 103.

"A. Why this river came down kind of bank gravel probably or something. There's an island, ain't it (indicating)? Then it took off just as channels always do,—it took its trend off where it butted against this and struck something else here (indicating). The trend of the shore governs the channel of the stream wherever there is any current. For instance a stream naturally takes the belly, as we call it, of the shore where the shore trends in; then the channel will follow that until it strikes some obstruction or comes to some point and then it will cross over exactly as this bend indicates. If that bend is sharp it will cross sharp. If it is more slanting down river it will cross until it strikes something else and then it will come back. Wherever there is any current the trend of the shore always regulates the deepest water and throws that current to the point that has made the deepest water?

"A. Yes.

"Q. Then it is the scouring, then, of this point that you name as the channel of the waters flowing in that point that formed the deepest water, isn't it?

"A. Yes, that's it; you can discover it right here, for instance, on Grassy Point there is a channel down a piece in the bay there and then it spreads out, you know, and doesn't cut this channel."[1]

While expressing his view that the river ended at Big Island, he states, "The channel continues but the river—it's in a bay there."[2] Having detailed the main channel step by step and point by point as Wisconsin contends it existed, and asked whether this was the deepest channel of water from Fond du Lac down to the head of Grassy Point, he answered:

"Of course anybody looks at the map can tell that that is the deepest water. I don't know what you are trying to prove that that is all river, because there is a continuous channel down there. If that is it I should say that this upper bay has no characteristic of a river whatever. You never saw a river like that on the map or anywhere else. That's a bay."[3]

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[1] Record p. 104, fols. 104–5.
[2] Record p. 105, fol. 106.
[3] Record p. 106, fol. 108.

He testified that the usual course of navigation was on the line A–B–D, the so-called cut-off channel, and while he testified that he had not seen other boats navigating the channel, he himself had been on channel "H" many a time.

> "Q. And you found pretty deep water?
> "A. Just the same as marked.
> "Q. Mead's map shows the proper depth there so far as you know? A. Yes, so far as anybody knows."[1]

He testified to navigation by boats of 4, 2, 6, and 7 feet of water, and that—

> "the way they used to guide themselves in these different channels was by the grass. The grass would come up in the spring in the more shallow water. It was very easy to get up there."[2]

Without considering his testimony in further detail, suffice it to say that it comes merely to this: that the course of navigation lay practically exclusively inside of Wisconsin. He gives no testimony to ever having taken the so-called Minnesota channel, or ever having known anyone else who took it. Such navigation as he did that is in any way relevant to this controversy was in the main channel of the St. Louis River, which he recognized and testified to with the utmost frankness as the deepest channel, clinging meantime tenaciously to his point of view, that the channel was not in the river, but in the lake, and it was upon this theory that he testified to his understanding and that of others as to the location of the state line "in the middle of the lake here, middle of the bays."[3]

The court will note further that his experience in navigation appears to have been confined to "five seasons following the Civil War, very near that."[4] So that his actual navigation appears

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[1] R. p. 108, fol. 112.
[2] R. p. 109, fol. 113.
[3] R. p. 109, fol. 114.
[4] R. p. 83, fol. 70.

to have been related to a period almost twenty years antedating the time when his experience might have been of any real value or helpfulness in determining whether Minnesota's legislature and the department of Engineers had been guilty of the colossal blunder that Minnesota must prove to establish her case.

(c) Alfred Merritt.

His brother, Alfred Merritt, terminated his experience at a time just preceding the period when the Department of Engineers reported their first survey of the main channel of the river "forming for the distance surveyed the boundary." In 1917 it had been thirty-four years since he quit sailing along about 1883. It appears then that he was seventy years old and attempting to give his recollection of the course of navigation thirty-four years earlier, testifying at a time when all of the conditions surrounding his experience had been practically obliterated. Asked as to the course traffic usually and generally took from Grassy Point up toward Big Island, he testified to the so-called cut-off channel, employing the letters placed upon Minnesota's Exhibit 1 in describing it.[1] And he testified to the use of the channel marked "H" to go to Milford.[2] He also took the same position as his brother, that the waters in question were a bay and not a river, and for this reason apparently fixed the boundary half way between the shores. And he referred to the general shallowness of the waters, but there is little doubt, we think, from reading his testimony, but what his understanding agreed with that of the engineers of the War Department, of Mr. Stuntz, and of the Minnesota legislature, because we find him speaking of "logs in the main river going up."[3] He testified specifically that the

[1] R. p. 113, fol. 121.
[2] Id.
[3] R. p. 120, fol. 132.

extent of his navigation on the north side of Big Island over Minnesota's course was only one trip.

"Q. How many trips did you make from Spirit Lake down?

"A. I remember of only one trip from Spirit Lake down.

"Q. And you went on the north side of Big Island?

"A. Yes, sir."[1]

And without prompting or suggestion, while detailing the course taken by this one raft of logs which he did not bring down through the south channel from Spirit Lake, in response to the question, "When you came down with your raft of logs from Spirit Lake, can you indicate the course you took on this map?" he replied:

"A. Yes, I can. Take it above Milford a little ways, above where the dock was put there, I did not come down this main channel—

"Q. By the main channel do you mean H?

"A. I left it here somewhere. (Indicating)

"Q. By 'here' you mean at a point marked—what is that?

"A. There is a shallow channel in there. Do you see 8 feet marked in there? Look at it close and see if you can see it.

(Mr. Gard examines the map with a magnifying glass.)

"Q. When you say you left the main channel, do you mean that you left the main channel near where the word 'clay' is printed on this Wisconsin Exhibit 1?

"A. Let me see. (Examining the map very closely.)

"Mr. Hudson: Better locate it as the first one west of H, because there are other words 'clay.'

"Mr. Fryberger: When he finally locates it we will put it in red, so it will be on the map.

"A. Well, I left close to here. (Indicating.)

"Q. That is where the word 'clay' is?

"A. Well, it is pretty close there, yes.

"Q. That is, the word 'clay' westerly of the red letter 'H'?

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[1] R. p. 129, fol. 146.

"A. Yes, close to that.

"Q. And you left the main channel at that point?

"A. I left the *main channel* there, and came over, straight over."[1]

The point indicated by him as being marked "8" was in the vicinity of the bar so often testified to, lying to the westerly of Fisherman's Island. And this witness, leaving that point and going by the shortest line toward the end of Grassy Point, in detailing his course, stated then, not that the line C to B and on to G described the main channel of the river, but that he *left the main channel of the river* when he took this course. And as if to leave no doubt as to what his understanding of the main channel was, when he was asked, "You regard that white channel there, in which are marked the soundings, many of them 31 there, opposite Grassy Point, as the main channel?" he answered, "Sure."[2] And while in response to leading questions, counsel induced him to characterize his course as following the main, navigated, and navigable channel,[3] the court will treat as much more significant his unstimulated characterization of the course as one which "left the main channel," and not one which followed it. And his instinctive designation is far more valuable and significant, we submit, than the prompted one.

So that these two prominent Minnesota witnesses, once their conception of the waters as bay or lake be laid aside, are in full accord with us, in their understanding of the location of the main channel, or the deepest channel.

Recalled for further examination, Alfred Merritt testified—

"And on the upper river, on what the witnesses have called the main channel in the upper bay, where there was two places in there where—there was one place that was

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[1] R. pp. 133–134, fols. 154–5.

[2] R. p. 135, fol. 156.

[3] R. p. 149, fol. 180.

just above Millford, you can see it on this map here, and see a boom mark for that old Meade survey, just above there there was 8 feet of water, and one place above near what we called Knowlton's place, between Knowlton's place and Marschand, about, there was about 8 and 9 feet of water; the rest was deep water, 10 or 12 or 15 feet."[1]

He stated that nine out of ten boats went up the cut-off,[2] and testified to bringing a scow of stones down the main channel, coming down in the night.[3] Questioned as to the course of the Pierpont, which navigated in the '60's—

"Q. And that was all done in the main channel, then, of the St. Louis?

"A. Yes, sir, that was done in the Millford channel; *in the main channel in the upper bay.*"[4]

And again:

"Q. Did you take the cut-off principally in going up the river with that boat?

"A. Yes, sir, except when the business called me on the north side of the upper bay.

"Q. Was that very frequent?

"A. Not very frequent."[5]

There were two other instances when he remembered having gone on the north side of Big Island, and he took the main channel.

"Q. Do you recall any instance where you went on the north side of Big Island?

"A. Well, I towed one raft of logs out of the Knowlton, opposite of Knowlton's place; hat is between Marschand and Joe Knowlton.

"Q. Where is that?

"A. That is this side of where Captain McDougall is building his shipyards now.

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[1] R. p. 977, fol. 1526.
[2] R. p. 978, fol. 1527.
[3] R. pp. 978–979, fol. 1528–9.
[4] R. p. 979, fol. 1530.
[5] R. p. 980, fol. 1531.

"Q. In the vicinity of the Millford mill?

"A. Yes, just above. Probably half a mile or a mile; nearly a mile. And then I took a raft of logs from Spirit Lake, from the inside in there of Spirit Lake, down through that way; but all my other towing was done through the south side of Big Island.

"Q. When you took that raft out of near Millford there you went up the old or Millford channel?

"A. Yes, sir, went up the north side of the bay.

"Q. And when you brought that raft down from Fond du Lac you went in the old or main channel, didn't you?

"A. Sure I came down that way, yes, sir."[1]

(d) B. F. Howard.

B. F. Howard was a brother of the Howard who previously testified. After testifying generally to his familiarity with the waters and channels, in answer to direct question he testified that the usual route of travel was from C to B, and down to A, which he said was "very close to where they used to stake out the channel."[2] Apparently he did not agree with his brother, who had testified that most of the tugs and small boats went through the cut-off.[3] While he appears to have required only water 7 feet deep, saying—

"I looked for water close to seven feet; when I got that I went along."[4]

The Lottie Bernard drew "pretty close to seven."[5] He testified to getting out of the river once from the south channel, spending a half day getting off, and after that he took the other channel. His brother, it will be recalled, testified that boats "lots of them" went through the cut-off channel, drawing 10 to 12 feet.[6]

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[1] R. pp. 980–981, fol. 1531–2.
[2] R. p. 157, fol. 192.
[3] R. p. 158, fol. 195.
[4] R. p. 166, fol. 208.
[5] R. p. 164, fol. 204.
[6] R. p. 70, fol. 50.

We find a prolonged struggle on his part to evade the admission of what is perfectly obvious to every one, that the deepest channel ran parallel to Grassy Point up toward Milford. And while he needed only 7 feet of water, and while the testimony is absolutely undisputed that, continuously from the date of the Meade map, there was a depth of 12, 10, and never less than 8 feet over this bar, being a foot deeper than the water which he needed to run in,[1] he yet testified as to the Milford channel:

> "the general understanding at that time was that you could get in to it but you had to come out the same way you went in."[2]

And again:

> "That was the reason we had to do it, on account of the bar."[3]

He never knew of any boat drawing 6 feet of water going between the point marked "C" and the deep water in toward Milford.

It is an incontrovertible physical fact that in the early '90's there was a shoal place north of Fisherman's Island, over which there was a depth of approximately 4 feet, which extended all the way to the main channel at Grassy Point. And yet, if the testimony of this witness is to count for anything, he must persuade the court that he navigated a boat across this area with a draft of 7 feet.

Apparently most of his experience had to do with towing logs on the Wisconsin side, in the early '60's, for which "two foot or two foot and a half would be ample."[4] It is rather difficult to get a definite idea of just what his navigating experience was in

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[1] R. p. 168, fol. 210.
[2] R. p. 158, fol. 194.
[3] Id.
[4] R. p. 162, fol. 201.

later years, as appears from his answer to a question as to whether the channel was dredged in 1891. He said:

> "A. I can't tell you. I don't know. I have forgotten exactly about that. About in '91, whether that was '92 or '93, whether that was dredged then or not; but I don't think it all was; may be some of it; I don't think it was; I wouldn't be positive as to that.
>
> "Q. Do you recall the fact that there was a saw mill at New Duluth in 1890 and '91?
>
> "A. No, sir."[1]

Coming to the very crucial question as to the existence of any channel at all where Minnesota claims the main navigated and navigable channel to be, he was asked—

> "Q. Was that a well-defined channel through this point?
>
> "A. I don't know. We never had any trouble after we got up here. Never had any trouble after we got to Swanson's. Had no trouble anywhere here after the stakes was set. Trouble was in the spring when you would go to set the stakes.
>
> "Q. You had no trouble because this was a well-defined channel, deep channel?
>
> "A. There was water enough for us after we got it staked out.
>
> "Q. This staking it out was simply to indicate where the channel was?
>
> "A. We would take a pole and go and find where the deepest water was crossways and then set two stakes down.
>
> • • •
>
> "Q. Your purpose was to stake out the channel?
>
> "A. Yes, purpose was to keep us in water we could float in."[2]

Which, we submit, was very far short of establishing the existence of a channel at all.

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[1] R. p. 167, fol. 209.

[2] R. pp. 165–166, fols. 206–7.

(e) Charles A. Krause.

Charles A. Krause was another Minnesota witness, whose testimony, so far as it is not a complete blank, is favorable to the contention of Wisconsin. Having eliminated in thoroughgoing fashion, as quoted in the Minnesota brief,[1] all experience with the Milford channel, we find him testifying that none of the boats used the north channel going around the north of Big Island.[2] And on cross examination he reiterated this proposition: "We always took that channel."[3]

We come now to the illuminating portion of his testimony, which we submit must relate to an effort to go north of Big Island, via the so-called main navigated, navigable channel of Minnesota. Bearing in mind that the Milford channel has been laid entirely out of consideration, this was his reason for taking the cut-off channel:

> "A. Because if we sailed through the other part of it—we tried that once and we got stuck and was kept all night there in the channel or in the grass there.
> "Q. You got in the grass, did you, the other way?
> "A. Yes.
> "Q. And after that you didn't try it any more?
> "A. We wouldn't try it any more because we didn't want to stay there all night."[4]

This testimony related, if it had relation to anything material to this controversy, to the suppositious channel, A–B–C.

(f) Albert Swenson.

Albert Swenson gave testimony extending over thirty pages, the significant portion of which was that he had lived on the banks of the St. Louis River, about opposite Big Island, industriously referred to in the record and brief as the shore of

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[1] Minn. brief, pp. 117–118; R. pp. 171–172.
[2] R. p. 172, fol. 218.
[3] R. p. 173, fol. 220.
[4] R. p. 173, fol. 220.

Upper St. Louis Bay, from 1870. His experience in navigation, as testified to on direct examination, was—

> "Not more than a small boat; not on any large boat; only a trip now and then on a passenger boat." * * * the draught "which the ordinary row-boat or sail-boat would draw."[1]

This he restricted on cross examination to "nine inches to a foot; hardly a foot; about a foot of water I should say."[2]

> "Most of the traffic went through what we call the short-cut."[3]
>
> "If they had a boom of logs to tow they would tow down around this way * * * north of Big Island."[4]

He did, however, contribute to the record the fact that there was a considerable amount of "drift wood, and sawdust, and all kinds of rubbish,"[5] and a "considerable amount of dirt coming down too, in solution in the water."[6] Elaborating, on cross examination, he testified:

> "I know one place there were sawdust and planing-mill shavings and sand and mud mixed to a depth of 7 to 8 feet."[7]

Answering a leading question, he testified to shallow water in the vicinity of the so-called bar on the Meade map. The cut-off channel, he testified was "fully as deep, and deeper than the other, but narrower."[8] He stated, "the larger boats take either route, through the short-cut or through around west of the island,"[9] testifying as to the character of the boats:

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[1] R. p. 177, fol. 226.
[2] R. p. 200, fol. 265.
[3] R. p. 177, fol. 227.
[4] R. p. 178, fol. 227.
[5] R. p. 179, fol. 230.
[6] R. p. 180, fol. 230.
[7] R. p. 188, fol. 244.
[8] R. p. 181, fol. 233.
[9] R. p. 190, fol. 247.

"Q. And the boats that they used in those early days never drew more than 7 or 8 feet of water, did they—6 or 7 feet?

"A. I don't suppose they did.

"Q. And they could get through wherever there was a depth of water of 6 or 7 feet, couldn't they?

"A. I don't believe they could get through 6. Probably they could. I don't know what water they drew.

"Q. Well, seven or eight feet.

"A. I don't know how much water they drew."[1]

The extent of his knowledge as to where the main channel in these waters was appears from his answer to the question—

"Q. What channel do you know as being referred to as the main channel—any channel?

"A. Well, I—I don't know how to answer that."[2]

And again:

"Q. You say you don't know which is the main channel?

"A. No."[3]

Also, he admitted that boats frequently went around that channel "H" and then around the channel north of Big Island, and they all went through that channel when they went to Milford.[4] There were very few large boats at that time; they were not particular about finding channels, and they took the shortest cut. He added:

"Of course there were not boats every day; there were probably weeks between boats, months sometimes, you know—sailing boats. * * * back in the '70's and the '80's."[5]

Again, we submit that there is nothing in the testimony of this witness calculated to upset the presumption which obtains that

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[1] R. p. 190, fol. 248.
[2] R. p. 197, fol. 259.
[3] R. p. 197, fol. 260.
[4] Id.
[5] R. p. 198, fol. 261.

the survey made by the engineers of the War Department of the main channel of the St. Louis River from Grassy Point to Fond du Lac, or the State line between Wisconsin and Minnesota, was located otherwise than where they found and mapped it.

(g) D. E. Stevens.

D. E. Stevens is another witness for Minnesota, whose testimony did little to further her ends. The gist of his testimony is found in one sentence:

> "After we get to the south end of Grassy Point then followed that red line from A to B to D through the cut-off, was the main navigated channel. * * * and the course usually taken by all kinds of traffic."[1]

As to the main channel, asked—

> "Q. Did you know of its being used except for that purpose, that is where there was business up there at Milford or up in that direction?
> "A. No, I don't remember."[2]

This with other such questions and answers, is quoted in Minnesota's brief.[3] But to appreciate how thoroughly his testimony illustrates the hazards of casting aside a perfectly plain, unambiguous, contemporary official record, in favor of the uncertainties of purely partisan conjecture groping to reproduce a picture of conditions existing half the span of a life time earlier, we may pursue his testimony as to the Millford channel a little further. Over the page, he said of the Milford channel:

> "A. I don't remember of ever seeing that channel.
> "Q. Well, did you know about there being a bar or shallow place over at the westerly end of this curved line H?
> "A. No, I didn't know about that bar.

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[1] R. p. 212, fol. 285.
[2] R. p. 213, fol. 286.
[3] Minnesota brief, pp. 122–123.

"Q. Didn't go around there?
"A. No, sir."[1]

Two pages further on, we find, however, that he did go to Milford with his tug—

"Just once or twice, something like that, I remember going in there."[2]

And while he was still hazy, he thought he could tell the way he went with a map. And then follows this significant sentence:

"I remember coming out through a narrow channel there that ran out in to the main—"[3]

where the court will note that he caught himself just on the point of using the ordinary and accustomed terminology with reference to the Milford channel, as employed by both of the Merritts and others of Minnesota's witnesses, to-wit, the main channel. We find him fumbling and floundering in and out of the Milford channel, but finally ending up by locating himself in this channel "H" with a cross.

"Q. That cross is in channel H, isn't it?
"A. Yes, sir."[4]

Although four pages earlier, he had no recollection of ever having seen that channel.

Verily, "This Captain Stevens was a man who it must be conceded was thoroughly familiar with these channels."[5]

After some prompting, he testified that if he went north of the island, he would take the line testified to by other witnesses for Minnesota, but with no detail or discussion or indication that

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[1] R. p. 214, fol. 288.
[2] R. p. 216, fol. 291.
[3] Id.
[4] R. p. 218, fol. 295.
[5] Minnesota brief, p. 163.

he had ever gone that course. He reiterated, however, that most of the traffic went southerly of Big Island.[1]

On cross examination it developed that he navigated a wood scow which drew about 4 feet;[2] that then he procured a tug in 1884 or 1885, which he used in hauling sandstone, and he always went through the south channel. This tug drew about 6 feet. There were not many boats in the '70's, and most of them were of very shallow draught.[3]

On redirect examination, he testified to taking the short-cut channel with the tug Mystic, which drew 10 feet of water, and that he could get through all right.[4]

The court need only examine the Meade map in the vicinity of Fisherman's Island, where the depth is limited to 7 and 8 feet, Wisconsin's Exhibit 31–E, which mapped the area in April and May, 1891, disclosing a line of soundings of approximately 5½ feet, or the Parkinson map (Wisconsin's Exhibit 31–C), showing substantially the same line of soundings, to be convinced of the utter unreliability of any testimony that a boat drawing 10 feet could have navigated this cut-off channel at any time between 1861 and 1893. We see then that, so far as this witness is concerned, he testifies to no personal experience whatever with the so-called main channel of Minnesota, over the vital link from B to C, nor is there the remotest suggestion that in any true sense there was any channel in that vicinity.

(h) C. W. McManus.

C. W. McManus gave an interesting variation to the generality of Minnesota witnesses in fixing the mouth of the St. Louis River opposite Grassy Point. He likewise testified as to the channel between Wisconsin and Grassy Point:

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[1] Record p. 214, fol. 287.
[2] Id., p. 215, fol. 289.
[3] Id., p. 221, fol. 299.
[4] Id., p. 224, fol. 303.

"Yes, we always spoke of it as a river."[1]

He testified to commencing sailing in '71, with a 6½ foot boat. He continued for seven years.[2] He was in the boating business fifteen or sixteen years altogether, which would bring him about to 1886, terminating his experience thirty-one years prior to the time when he gave his testimony. He testified to having been up above Grassy Point in a boat drawing 10 feet, going to Fond du Lac, prior to the dredging of the channel.[3] And with reference to the course near Fishermen's Island, he said:

> "I remember we used to go right close to it. The channel was wide, or water was wide; we could go close to it."[4]

He then testified specifically with reference to the matter:

> "Q. Prior to the time that the Government channel was dredged out I think you testified that you were on a boat of ten feet draft. Did you ever go up with that ten foot draft boat alongside of this island and north of Big Island?
>
> "A. That's the way we went."[5]

We may note that he contradicted the testimony of the first of the Howards, saying:

> "Six and a half foot could go in the cut-off but a boat drawing more water than that would have a good deal of trouble."[6]

The fact that he navigated a 10 foot boat above Grassy Point prior to 1886 is especially interesting, in view of the fact that, as shown by the report of Mr. Parkinson under date of January 19, 1885, which is borne out by his map,[7] beginning about

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[1] Record p. 232, fol. 316.
[2] Id., p. 225, fol. 305.
[3] Id., p. 227, fol. 308.
[4] Id., p. 228, fol. 309.
[5] Id., p. 228, fol. 310.
[6] Id., p. 228, fol. 310.
[7] Wisconsin Exhibit 31–C.

2,000 feet from Rice's Point, "up the bay the bottom is exceedingly uniform, averaging between 7 and 8 feet in depth."[1] As appears from the map in the Engineers Report for 1887, which we have reproduced,[2] the dredging to Grassy Point was still merely "Proposed," and no provision was made therefor until 1888.[3] So that Mr. McManus must have taken his 10 foot boat through an average of about 7½ feet of water in St. Louis Bay, in order to get above Grassy Point. We cannot improve upon the language of Minnesota's brief:

> "he testified that in 1888 and 1889 he ran a boat up these channels that drew nine and ten feet of water. If the other testimony is true, and the soundings shown on the Government charts are true, this certainly cannot be the fact."[4]

But assuming that he was there, he was confronted with the more difficult problem of navigating a 10 foot boat along the Minnesota channel close to Fisherman's Island. Let the court turn its attention to Wisconsin's Exhibit 31–C again, which has, faintly to be sure, this projection or pocket that extended over toward this Fisherman's Island, the deeper portion of Minnesota's contended main channel. It will there appear that there is not a single sounding in the entire area that runs as high as 10 feet, and a fair statement, we think, would be to place the ruling depth at not to exceed 8½ feet, finally terminating in the last sounding toward Fisherman's Island in 8.1 feet, after which, as we have already seen, no soundings at all were given upon this earlier map, and the inference is irresistibly clear that the ruling depth in the later '80's must have ranged at approximately 4 feet; while the Meade map itself is evidence that no boat drawing 10 feet could ever, from '61 on, have traversed this Minnesota

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[1] Rep. of Chief of Engineers, 1885, Pt. III, p. 1963.

[2] U. S. Stat. L., Vol. 25, Fiftieth Cong., Sess. I, Ch. 860, 1888, p. 407.

[4] Minn. brief, p. 169.

channel. Consequently, if Mr. McManus ever went above Grassy Point with his 10 foot boat, we think it safe to say that he went down the only channel that could possibly have accommodated this draught, and that is the main channel, often referred to by Minnesota witnesses as the Milford channel.

(i) Alexander McDougall.

Alexander McDougall testified as to the cut-off channel:

> "A. Well, we only looked on to the one channel in those days as the channel on the south side of the island.
>
> "Q. Was that the course that navigation usually took—the south side of the island?
>
> "A. Yes, that is all that I know."[1]

And he navigated the course along Minnesota's line, A–E–G–B–D. Asked if there was a navigable channel next to Grassy Point, meaning the main channel or the Milford channel, he answered: "Not that I know." And questioned specifically as to "the character of the water there," he made the somewhat overenthusiastic statement that in this area, where the prevailing depths exceed something over 20 feet—

> "The character of that whole bay was such that a man could wade on that pretty nearly from any place up on the river here, through that whole country,"[2]

indicating that either the captain was devoid of detailed information as to the character of the waters, or else testifying thirty-one years after the event, his recollection was somewhat confused and hazy.

Construing his testimony most favorably, he stated that the deepest draught vessel with which he navigated above Grassy Point was, "I should judge about five feet."[3]

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[1] R. p. 235, fol. 323.
[2] R. p. 236, fol. 323.
[3] R. p. 243, fol. 335.

One thing, however, is certain: He testified to no experience in navigating the crux of the Minnesota channel so-called, from B to C, nor did he testify to anybody else ever having gone that course. Prior to 1880 there were no boats navigating up there, aside from small boats, skiffs, and "possibly four or five boats all told, small tow boats, would have been working up in the bay • • • between 1880 and 1890."[1] Again, he testified to his entire ignorance of the so-called Minnesota chanel, saying—

> "It would be better to know the channel and know where that channel was up south of the island. I always supposed there was no channel on the other side."[2]

(j) Frank A. Brewer.

Frank A. Brewer testified that there were two channels used south of Grassy Point; the one in more common use was the cut-off channel south of Big Island.[3] He stated that he never saw the Milford channel used.[4] He testified to having noticed the change in the bottom, so that they had to make new soundings in the vicinity of Spirit Lake and Big Island. He testified that so far as he knew, the line on the map[5] showed the generally accepted state boundary.

On cross examination it developed that his business was largely towing rafts and boom sticks. The course pursued he considered a bay channel,[6] but it was none too well defined. We think, however, that the force of his testimony as to the existence of a channel from B to C was largely dissipated on his redirect and recross examination. In speaking of the Milford channel,

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[1] R. p. 252, fol. 351.
[2] R. p. 253, fol. 352.
[3] R. p. 260, fol. 364.
[4] R. p. 261, fol. 365.
[5] Minn. Ex. 18. R. p. 263, fol. 368.
[6] R. p. 267, fol. 375.

he used this expression, unconsciously confirming Wisconsin's contention saying—

> "We undertook to go up what is known as the deeper channel on the inside there,"[1]

although he had previously testified that he never saw it used. He testified as to "getting aground about the point of that bar across that channel there,"—

> "and after we were aground we sounded around there and we weren't able to find any channel that that Rambler could go out into the channel that was commonly in use. The channel that was commonly in use was—tugs drawing around 7 feet could use that, and that was the one in towing the logs there. We towed for many years there and that was the one that was in use, the straight channel."[2]

This Rambler drew "around nine feet when she was loaded," and the Rambler "never used the channel C to B."[3]

The significance of this testimony, we think, lies in the fact that the point where he testified to getting aground was in the immediate vicinity of the southwesterly terminus of the so-called main navigated and navigable channel of Minnesota, the shallowest place in which, as appears from the testimony of Mr. Brewer himself, was as deep as this so-called channel.

> "Q. It was as deep at the shallowest place as the channel that you indicate, C–B?
> "A. Yes, sir.
> "Q. That's true, isn't it?
> "A. Yes, sir.
> "Q. But no deeper, you say?
> "A. At the upper end it was no deeper.
> "Q. But it was as deep at the shallowest place?
> "A. That is the way we find the soundings."[4]

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[1] R. p. 939, fol. 1466.
[2] Id.
[3] R. p. 943, fol. 1472.
[4] R. p. 941, fol. 1469.

It is a very singular situation indeed that if there was a channel from C to B, there should have been anything to prevent their going from the main channel, even if aground on this bank or shoal or narrow, as indicated on the Meade map, back into that channel. If Mr. Brewer was correct in his testimony that he spent an afternoon trying to get from the Milford channel into the Minnesota channel, substantially in the vicinity where the Minnesota channel, if it existed, connected with the Milford channel, and he could find no way to get through, we submit that the reason was that there was no place to go from the main channel across the gap from B to C into the cut-off channel; and it would seem a demonstration that if it was not feasible to leave the Milford channel at C and go to B, and that a search of a half day disclosed no possibility of doing so, then it is equally certain that it was impossible to go from the cut-off channel, leaving B, across to the point C. And the court will especially bear in mind that Captain Jeffry was very positive that any course taken from B to C, terminated to the north of this bar. So that we submit, this witness confirms what the soundings of the Engineering Department disclose, that there was no channel in this much mooted vicinity.

(k) Luther Mendenhall.

Luther Mendenhall was a real estate dealer in Duluth. He identified a number of maps which were received under objection, but on cross examination he testified that he never knew any state line questions to be referred to any of the lines on the map to determine.[1]

(l) John H. Norton.

John H. Norton, whose experience covered the time "from about the first of August until some time in December,"[2] 1891,

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[1] Record p. 273, fol. 384.
[2] Record p. 275, fol. 388.

and who made, he thought, on an average of about three trips a week for a couple of months with a tug drawing about 5 feet, testified to having taken the so-called Minnesota channel, and also the cut-off channel. We think the force of his testimony for Minnesota is much weakened by an incident which he narrates, similar to the experience of Mr. Brewer. Indeed, we think the same conclusion follows. These questions and answers appear in the record:

> "Q. Do you know whether at the westerly end of that line that I have just called your attention to, marked H, there was a shoal or bar?
>
> "A. That was all shoal water.
>
> "Q. Ever get stuck there?
>
> "A. I did. I was coming down with a scow loaded with wood one night and it got dark when I was abreast of Ironton over here, and when I got around up to the point to haul up the clay banks. There was no channel there so far as Government buoys were concerned, no stake, and I got over there to the eastward of the channel and got hard aground and lay there till noon next day before a tug came along and pulled me off.
>
> "Q. Was the water deeper in the line marked B–C than it was at this point you have indicated just easterly of C?
>
> "A. It was."[1]

The location of this experience he undertook to make definite by reference to Minnesota's Exhibit 3, stating that it was in the vicinity of the soundings to the northeast of point C, where 2½, 3½, 5, 6, and 7 appear, which would be in the immediate neighborhood of the westerly terminus of the Minnesota channel.[2]

Again we suggest the same inference—that is, if it was impossible for him to go from the shoal place in the main channel, at all times confessedly as deep or deeper than any part of the Minnesota channel, it must have been because there was no recognized channel between those points. And the court

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[1] R. p. 275, fol. 388.
[2] R. p. 276, fol. 390.

will likewise bear in mind that this witness was testifying to an isolated experience twenty-six years prior to the date of such testimony, and will, we are sure, hesitate long before upsetting the recorded contemporary reports of men whose business it was to make soundings, upon the strength of such fugitive impression expressed a quarter of a century after its first reception.

(m) Martin Wheeler.

Continuing the consideration of the testimony of Minnesota's witnesses in the same order in which counsel's brief presents them, we come next to the testimony of Martin Wheeler, whose experience ended even earlier than that of Alfred Merritt. Apparently he did no navigating of the waters subsequent to 1881,[1] and was doubtful if his experience had not terminated in 1880.[2] So that we perceive this testimony relates to a period terminating from 12 to 13 years prior to the time when an accurate picture of conditions would really be decisive. It is further apparent that Mr. Wheeler was testifying as to his recollection of conditions antedating his testimony some thirty-six or thirty-seven years. His testimony is illuminating, further, in bearing out the reports of the Department of Engineers, that there was no considerable navigation above Grassy Point during the period with which he was familiar, as it would seem from his testimony that, outside of himself, Alfred Merritt, Jack Jeffry, the two Howards, and one or two more, there was no one else who made a business of running up the river.[3] So that we are confronted with the proposition that the experience of half a dozen individuals, operating from fifteen to twenty-five years prior to the time when their observation or knowledge would

[1] Record p. 949, fol. 1482.
[2] Record p. 959, fol. 1498.
[3] Record p. 950, fol. 1484.

have been in any sense decisive or especially pertinent, is to outweigh the detailed technical surveys, examinations, and reports of men with professional reputations at stake, in the department of the Government service most notable from its very organization for high standards of efficiency and conscientious attention to detail. He testified, however, that in going to Fond du Lac, they generally took "what is called the cut-off," the line from B to D, and then on; that if they were going north of the island they would take the line B–C, but most of the traffic was through the cut-off.[1] In fact, it does not definitely appear that this particular navigator ever had any personal occasion to travel the line B–C at all.

And so far, we think, the court will agree, there is little to suggest that there was anything to take any navigator up the river during this period beyond Milford, unless he went to Fond du Lac. We may assume, therefore, that the traffic along the line B–C, if any, was of a relatively negligible character. Pressed for an estimate, he expressed the view that nine-tenths of the traffic went along the line A–G–B, which is the cut-off channel, and one-tenth over the channel "H" up to Milford. He was not asked and he expressed no view as to what the relative proportions of the traffic were, comparing that which took the course B–C with that which went over the route "H", and it is the establishment of this section of the line from B to C as a navigated channel, which is absolutely and vitally indispensible to the successful maintenance of Minnesota's claim.

He further stated frankly that he had never made any soundings, and he would not testify to the obvious absurdity that the continuous depth along the line A–G–B–C was as great as that in the channel "H". Pursuant to leading questions, he testified that this so-called channel was some wider; he would

[1] Record p. 952, fol. 1487.

not testify, however, to any great advantage to be gained by going from B to C. The most that he would say was:

> "That would shorten it some but not so much. It would make it a little shorter."[1]

He testified again that when they went to Fond du Lac, they took the cut-off "almost always; not always, but almost always."[2] Finally, it appears that the Agate and the Amethyst, the only two boats which he owned and operated,[3] drew about 6 feet of water.

So that, at the most, all that Captain Wheeler's testimony amounted to was that he had gone a somewhat indefinite but rather limited number of times from that point B to C with a 6 foot boat. We assume that it is to this experience that he refers when he says that the number of tows would "be all guesswork; might have had 25, might have had 50."[4]

The court will note also that he was perfectly familiar with the Milford channel. He was not asked, and he did not volunteer any testimony about the existence of any bar or sand bank blocking the channel, to which some of his overardent contemporaries had testified, directly contrary, we submit, to undisputed fact.

Martin Wheeler wes recalled to testify that the ice went out of the so-called Minnesota channel and the Milford channel about the same time. It appears, however, that his point of observation was—

> "from the nearest part of the channel it would be from a half mile to a mile and then at the end of Grassy Point it would be two miles."[5]

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[1] Record p. 954, fol. 1490.
[2] Record p. 957, fol. 1495.
[3] Record p. 949, fol. 1482.
[4] Record p. 957, fol. 1494.
[5] Record p. 985, fol. 1539.

(n) H. G. Inman.

H. G. Inman rebutted the testimony of Minnesota's witness, John G. Howard, who had testified to going through the cut-off channel with a 10 foot boat, as he testified that his boat drowing between 10 and 12 feet did not, and could not have gone up above Grassy Point prior to the dredging done in 1893. His testimony was that he ran the so-called Mary Martini up above Grassy Point in 1885 for just one season, "every Sunday during the pleasant weather in the summer."[1] And this, we understand, was the extent of his experience with the navigation of the St. Louis River. On cross examination, he testified that he took the cut-off most of the time; once in a while he would come back the other way,[2] this other way, we assume, covering the channel B to C, as he had testified, somewhat ambiguously to be sure,[3] that this was the course taken when they went north of Big Island. We may assume from his testimony, covering pleasant Sundays during the excursion season of the year, that two dozen trips would be the greatest possible extent of his navigation, and that upon his own statement of the matter, eight or ten times would measure the greatest possible total number of his excursions from B to C. He likewise indicated that there was little navigation in the region, saying, "There weren't so very many boats."[4]

Finally, we think the court should bear in mind that it was during the beginning of this very year that the main channel of the St. Louis River had been surveyed by Mr. Parkinson, and that this main channel of the St. Louis River had been found and described and mapped, as coincident with the so-

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[1] Record p. 965, fol. 1506.
[2] Id., p. 966, fol. 1509.
[3] Id., pp. 965–6, fol. 1507–8.
[4] Id., p. 966, fol. 1508.

called Milford channel; and that Mr. Parkinson and his two assistants had been unable to find any soundings worthy of record throughout the entire course from B to C. Surely, anyone at all familiar, or even interested in navigation above Grassy Point, would have known of the location of the main channel of the river. If nothing else would have made an impression, the egregious nature of the mistake in locating it parallel to Grassy Point would have attracted the witness' attention,—and yet he testified with reference to the Milford channel, during this very year when it was officially mapped as the main channel of the river, "I never knew anything about it."[1]

(o) George Lloyd.

His clerk, Mr. George Lloyd, likewise testified for Minnesota. He sailed up there in 1885 with Captain Inman, and after that he towed stone with the Agate, which the court will recall from Mr. Wheeler's testimony, drew 6 feet,[2] and another boat called the Tourist. He testified that they usually took the cut-off;[3] always when they had business above Spirit lake that with the Tourist, which towed stone from Fond du Lac, he always went the cut-off.[4] He testified to four years' experience with the Walter S. Lloyd, which drew about 6 feet,[5] occasionally going up the St. Louis River when he got an excursion party.

"Q. Did you go the cut-off or go around?

"A. Well, I don't remember; we would go both ways. We generally would go up one way and down the other;

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[1] R. p. 966, fol. 1508.
[2] R. p. 949, fol. 1482.
[3] R. p. 970, fol. 1514.
[4] R. p. 971, fol. 1516.
[5] R. p. 972, fol. 1517.

it's according to which way the people aboard that was paying for the trip wanted to go.

"Q. How many excursions did you take up with that boat?

"A. I don't remember.

"Q. About how many?

"A. I wouldn't try to state how many, I don't remember. I know we took out excursions up there.

"Q. A great many?

"A. Well, a few.

"Q. A few?

"A. Yes.

"Q. Now what other boat did you run up the St. Louis River?

"A. That's about all that I remember now."[1]

It would appear, then, that his experience in traveling over B–C was necessarily the same as that of Mr. Inman, limited to eight or ten times and "a few" excursions with this 6 foot boat, in which he thought they went one way and came back the other. All the rest of his experience was with the cut-off channel. He was firm to the point of obstinacy in his insistence that he had never heard the Milford channel called the main channel of the river, and indeed he never heard of the channel. He then limited his testimony to his experience on the Martini, towing with the Tourist, which was all south and east of Big Island, and stated that—

"We called the north of the island the main channel."[2]

"Q. And that is what you have always regarded as the main channel?

"A. Yes, sir.

"Q. And everybody that you ever have talked with have stated that that was the main channel?

"A. Yes, sir."[3]

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[1] R. p. 972, fol. 1517.

[2] R. p. 974, fol. 1521.

[3] R. p. 975, fol. 1522.

And it is upon this testimony that counsel for Minnesota predicated the assertion that—

> "He was therefore very familiar with these waters in question before the Government dredging was done in 1893."[1]

Must not the court question his familiarity with the waters when it bears in mind that the region had been surveyed and mapped in 1885; specifically labeled as "the main channel of the St. Louis River" in the report for 1886; mapped in the greatest detail in the report for 1887 and referred to as the channel of the St. Louis River; that presumably pursuant to local pressure the legislature of Minnesota had established a dock line throughout the entire course of the Milford channel, to a point well beyond Fisherman's Island, and a considerable distance beyond the suppositious junction of Minnesota's channel with this official main channel, "natural channel," or deep water channel of the St. Louis River? And yet, such was the zeal of this witness, or his want of intelligence, that he had never heard of the channel, although we assume that after the establishment of the dock line, it had been properly monumented on the ground, so that no one could be mistaken as to the line beyond which obstructions might not be placed, under danger of incurring the penalty prescribed by the dock line law. And again we ask, is this haphazard, fugitive, fragmentary experience of an ill informed witness to counterbalance the weight to be accorded to the concurrent determination of the legislature of Minnesota, the Department of Engineers, acting under the specific instructions of Congress as to where the natural channel, or the main channel, or the state line in these waters was?

(p) J. H. Jeffry.

As appears from his cross examination, there seems to have been some reluctance on the part of Minnesota to place him on

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[1] Minn. brief, p. 145.

the stand, for he had been on hand for three or four days at the courthouse when the taking of testimony began. Possibly the reason was found in the fact that this witness, while he testified to having gone from B to C, the all important portion of the Minnesota course, was most emphatic and even blunt in his statement as to the condition of the shallowest portion of the main channel. And he had previously testified to his familiarity with the Milford channel.[1] Asked as to this so-called bar,—

"Q. Did you run over it very often?

"A. Oh, I suppose a good many hundred times in my life.

"Q. Had no trouble to go over it?

"A. No, sir."[2]

And again—

"Q. You always went over that bar island when you went northerly of Big Island?

"A. Yes, sir, there was no other way to get by. Didn't make any difference what channel you go over, you had to go past that flat place if you went north of the little island.

"Q. And if you went north of the Big Island you always went—

"A. That would take you north of Big Island.

"Q. All your navigation that you did northerly of Big Island was made northerly of that bar?

"A. Certainly. *You couldn't go any other place without going over water shallower than that was.*"[3]

Returning to the subject—

"A. You had that same flat water as you did going through here. Same flat place I don't care which way you went.

"Q. You had plenty of water between Grassy Point and that bar, didn't you?

"A. Yes, sir.

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[1] R. p. 994, fol. 1555.

[2] R. p. 999, fol. 1563.

[3] Id., fols. 1563–4.

"Q. Very deep water?

"A. Either side of it plenty of water.

"Q. You had more water in that channel over next to the Minnesota shore, didn't you?

"A. I think the chart shows more. I never sounded it. I had no occasion to sound it. I had plenty, all I needed; and I didn't sound it; and I never looked at the chart.

"Q. So far as you know all the boats go over that bar that you spoke of above this little island, that went northerly of Big Island?

"A. They either went there or else they went through the cut-off or they didn't get up to Fond du Lac."[1]

These boats of his apparently drew 6 feet, 2 inches, and 6½ feet. He testified that with scows, he took the cut-off "pretty near all the time."[2] His testimony throws another interesting sidelight upon the situation. Testifying as to his navigation of the cut-off, he said:

> "I went with the cut-off unless I was caught with something below that I had to get below. * * * That was got below the cut-off and I would have to come back against the current if I got through the cut-off."[3]

In other words, the current of the river appears to have been of such decided character that it was a sufficient obstacle or disadvantage to lead him to come down on the north side of the island, rather than to go back against the current to go through the cut-off. And while the great bulk of his traffic seems to have been south of the island, he testified:

> "The way I used to go the main channel when I would go up I would strike, just as I say, to the north of the little island."[4]

The net result of his testimony was, then, to completely negative and overthrow all of that testimony which had referred to

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[1] R. pp. 1000–1001, fol. 1566.
[2] R. p. 997, fol. 1560.
[3] R. p. 997, fol. 1561.
[4] R. p. 998, fol. 1561.

the Milford channel as a "hole," and which seeks to convince the court that this bar or shoal or flat place was sufficient to prevent navigation of the Milford, or main channel prior to dredging, because, as Mr. Jeffry most emphatically states:

> "You couldn't go any other place without going over water shallower than that was."[1]

(q) Review showing inconsistent and unsatisfactory character of Minnesota testimony as to navigation.

What, then, is the sum of the testimony upon which Minnesota relies to rebut and overthrow the compelling presumption of the regularity of the survey of the state line between Wisconsin and Minnesota, made pursuant to the direction of Congress; the dock and harbor line established by the legislature of Minnesota; the dock line established by the federal government at the invitation and request of the organized commercial activities of Duluth, and after direct hearing of their representatives? How is the effect of the adoption of the survey of the state line between Wisconsin and Minnesota and the subsequent authorization of the expenditure of $45,000 in the channel of the St. Louis River so surveyed and described as the state line, dissipated by their oral testimony?

Fifteen witnesses were sworn, and their testimony presents such a chaos of confused and contradictory view points that the evolution of a perfectly consistent, coherent picture of conditions is an impossibility. A composite made up of their recollections shows the two Merritts—Alfred and Leonidas, who appear to have been their most substantial and trustworthy witnesses, testifying that the great bulk of traffic went to the south of Big Island, through the cut-off channel. But Leonidas Merritt had never traveled the Minnesota channel from B to C, and apparently had never heard of its existence; but he did testify to his

[1] R. p. 999, fol. 1564.

familiarity with the main channel, and frankly and fully confirmed the existence of such a channel governed "by the trend of the shore,"[1] stating that anybody could tell that it was "the deepest water."[2] His experience, however, ended about 1870, nearly half a century before he testified.

Alfred Merritt, his brother, likewise testified to the use of the cut-off channel, and so far as the record shows he made but four trips to the north of Big Island. Three of these were in the main or Milford channel, and just one single trip was through the Minnesota channel from C to B. And the only time that he appears to have taken this course, as the most natural description of the way he went, without any prompting or suggestion, he stated: "I left the main channel there, and came over, straight over."[3]

Their contemporary, Alexander McDougall, on the other hand, had never heard of any channel to the north of Big Island at all, and was under the impression that he could wade the 25 or 30 foot Milford channel.

John Howard testified that the bulk of the traffic was through the cut-off channel, and sought to demonstrate the impossibility of going the main channel, by reason of the bar near Milford; and he also testified that boats drawing 10 to 12 feet "go up this other south channel, lots of them."[4]

His brother Ben, however, looking "for water close to seven feet,"[5] who went along when he got it, got out of the river once in the south channel "and was about a half day getting off, and after that we took the other channel."[6] Ben Howard indicated that if this bar had been eliminated from the Milford channel,

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[1] R. p. 104, fol. 105.
[2] R. p. 106, fol. 108.
[3] R. p. 134, fol. 155.
[4] R. p. 70, fol. 50.
[5] R. p. 166, fol. 208.
[6] R. p. 164, fol. 204.

"it would have been very much easier for us but we always brought her in trouble here."[1] And having thus indicated that this was the natural and more desirable channel, except for the so-called bar, Captain Jeffry took the stand, and demonstrated that so far as the bar was concerned, all the traffic going to the northerly of the island was compelled to cross it. And after Ben Howard had indicated that to find "ten feet of water would bother them pretty bad them days,"[2] C. W. McManus contradicted both the Howards, rebutting John Howard, who had known lots of 10 and 12 foot boats to go through the cut-off, with the statement that "six and a half foot could go in the cut-off but a boat drawing more water than that would have a good deal of trouble."[3] Ben Howard, the court will recall, had confined his navigation largely to the north of Big Island. Mr. McManus met Ben Howard with the assertion that he had taken a 10 foot boat right along the Fisherman's Island and to the north of Big Island. Captain Stevens restored the balance in favor of John Howard by testifying that he took the tug Mystic through the cut-off, drawing 10 feet. In these statements, of course, all four of the witnesses were contradicted by all the soundings that had been taken prior to that time, and their testimony specifically negatived by that of Minnesota's witness, H. G. Inman, who testified that prior to 1893 it would have been impossible to take a boat drawing 10 or 12 feet above Grassy Point.[4] And while Ben Howard went from B to C with a 7 foot boat, and McManus with a 10 foot boat, Mr. Krause, whose competence is vouched for by Minnesota, and who always took the cut-off channel, had demonstrated to his satisfaction that it was useless to try to travel from B to C with any boat at all, because

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[1] R. p. 158, fol. 194.
[2] R. p. 166, fol. 207.
[3] R. p. 228, fol. 310.
[4] R. p. 963, fol. 1505.

he "didn't want to stay there all night."[1] And having so demonstrated the inaccessibility of the easterly end of the channel, Mr. Brewer proved he wasn't able to find any channel by which he could get into the channel C to B from the west, notwithstanding his admission that its shallowest point was as deep as the channel he sought to enter.

John H. Norton, out of his limited experience, contributed the information that he had been stranded all night and until noon the next day near C, making a like vain effort to go from the main channel through the so-called Minnesota channel.

Mr. Swenson, a "bluff old captain," whose personal experience had been confined to boats with a draft of 9 inches to a foot, summed up the knowledge and the experience of the entire lot, we think, when he stuttered this conclusion as to the location of the main channel: "I—I don't know how to answer that."[2]

There was not a single witness who testified to the navigation of the channel A–G–B–C to the exclusion of all others, and there was but one witness who testified unequivocally that the general course of navigation above Grassy Point lay to the north of this Fisherman's Island, and over the line B–C. This was J. H. Norton, and his experience was limited to three trips a week for a couple of months—a scant two dozen times in all, with a light draught tug drawing 5 feet of water.

And what restraint of buoyant exuberance is involved in counsel's brief, when they state:

> "probably more than two dozen witnesses testified that all the traffic in the early days was over the channel marked A–G–B–C on defendant's Exhibit 1."[3]

The remaining fourteen witnesses all agreed that the great bulk of traffic ran over the course of the cut-off channel, de-

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[1] R. p. 173, fol. 220.
[2] R. p. 197, fol. 259.
[3] Minn. brief, p. 238.

scribed as A–B–D, which for the greater portion of its course indisputably lay wholly inside the state of Wisconsin, and whose navigation could and does illustrate no issue in the present case.

To what extent any traffic ever split away from this cut-off channel at the point B is not definitely ascertainable. Whatever the extent of the navigation was, it was insufficient to create any belief whatever in its existence in the mind of Alexander McDougall. Leonidas Merritt gave no testimony concerning it, and apparently knew nothing of it; C. A. Krause made one attempt to go that route from the East, and gave it up; J. H. Norton and F. A. Brewer attempted to find their way from the West without success; Alfred Merritt, in the course of navigation extending from 1868 and ending in 1882, during those fifteen years found occasion to traverse this line B–C on just one lone occasion; Albert Swenson put most of the traffic through the short-cut, while log towing was done north of Big Island, although freely admitting that he had frequently seen boats take the Milford channel all the way up to Spirit Lake. D. E. Stevens, using a contradiction in terms, said the cut-off "was the main navigated channel."[1] Frank A. Brewer characterized it as a channel "none too well" defined,[2] but the cut-off was "more in common use."[3] Martin Wheeler stated that most of the traffic was through the cut-off channel. He testified to the existence of the other line, but stated, as compared with the Milford, it would make it only "a little shorter."[4] H. G. Inman had done a slight excursion business; eight or ten times would measure the extent of his traffic over the route. George Lloyd was Inman's clerk, and his experience

[1] R. p. 212, fol. 284.
[2] R. p. 267, fol. 375.
[3] R. p. 260, fol. 364.
[4] R. p. 954, fol. 1490.

was apparently about the same. J. H. Jeffry appears to have divided his traffic between the cut-off and the Minnesota channel, using a boat of lighter draught, although perfectly familiar with the Milford channel, and testifying that there was no bar or obstruction interfering with its navigation that did not interfere equally with all other navigation north of Big Island. This, then, we think, would leave, at the most, but three additional witnesses whose testimony could in any fair view of the matter be held to sustain the claims of the line B–C to being the main navigated and navigable channel of the St. Louis River.

(r) **Usage by Minnesota witnesses, characterizing Milford channel as main channel of river.**

Quite as important, we think, as the definite testimony as to courses run and channels taken is the testimony of that unconscious but accurate reflex of experience with physical conditions which is embodied in the natural vocabulary of the witnesses.

The language of Chief Justice Marshall of this court, in *Reynolds v. McArthur*, 2 Peters 417, 440, is just as applicable to a channel as to a branch of a river which "has by consent retained the name of the main river, in exclusion of the others," and to the same extent, "must be considered, in the absence of other circumstances, as the true boundary intended."

And here we find but one witness who in terms characterized the Minnesota channel as the main channel, and this was Captain Inman's clerk, George Lloyd who, locating the bulk of the traffic through the cut-off, nevertheless stated: "We called the north of the island the main channel."[1] Captain Stevens called the cut-off the main navigated chan-

[1] R. p. 974, fol. 1521.

nel, while Alfred Merritt stated that he "left the main channel" to go from B to C, and appears customarily to have referred to the Milford channel as the main channel,[1] while Leonidas Merritt had said: "anybody looks at the map can tell that that is the deepest water,"[2] in full agreement with the committee of the Minnesota legislature, which but a few years earlier had referred to this as "the sinuous course of deepest soundings."[3] Mr. Brewer referred to it as "what is known as the deeper channel on the inside."[4]

b. Assuming existence of traffic, evidence of current or flow of water over course C–B completely wanting, consequently no channel there.

But assuming, for the sake of argument, that witnesses for Minnesota have established that as between it and the Milford channel, the preponderance of use or navigation lay over the course from B to C, would it necessarily follow that this constituted the boundary line between Wisconsin and Minnesota? We think not.

The test laid down by the Supreme Court of the United States, as quoted in the Minnesota brief,[5] is of course controlling:

> "• • • the jurisdiction of each State extends to the thread of the stream, that is, to the 'midchannel,' and, if there be several channels, to the middle of the principal one, or, rather, the one usually followed." *(Iowa v. Illinois,* 147 U. S. 1, 13)

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[1] R. p. 979, fol. 1530.
[2] R. p. 106, fol. 108.
[3] R. p. 1045, fol. 1645.
[4] R. p. 939, fol. 1466.
[5] Minnesota brief, p. 88.

(a) Law stated.

The term "channel" is a word of varied meaning.[1] We think that there are at least three meanings, one being the meaning argued for by the Iowa court, in the case of *Dunlieth Bridge Co. v Dubuque Co.*, 55 Ia. 558, at 564, where it was used to designate the entire expanse of water from bank to bank. The two other meanings are well expressed in *The Oliver*, 22 Fed. 848, 849:

> "The term 'channel' sometimes refers to the current of a running stream, and means that part of the stream in which the current flows. But in tide-waters the term refers to the movement of vessels, and means that part of the water on which vessels move."

We venture the suggestion that the sense in which the word has finally come to be adopted by the Supreme Court of the United States represents a combination of these last two definitions. In other words, the main channel of the river, as used in acts determining the boundaries between states has come to mean something possessed of preexisting identity, characterized or described as a channel, to which has been added the element, from the terminology of the mariner, of navigation. In other words, to constitute a boundary line there must be a combination of these two things first, a channel; second, navigation in that channel. And as pointed out, the deepest channel may exist, and yet be unsuited to navigation and be not navigated. This would not constitute a boundary. On the other hand, navigation outside of or apart from the existence of a channel in the river would fall equally short of constituting a boundary. The two elements must concur in order to meet the call of the definition which this court has laid down. Without the loss of the primary meaning of "channel," as "current" or "flow of water," the courts have imported or added

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[1] 11 C. J. 287.

the element of navigability or availability for navigation, but the determination of the main channel still involves the exercise of selection or choice between various channels or currents and in no sense presents the alternative between the course in a channel or current and a ship track, canoe track or tug track over the shallow slack water of a stream. There must, as this court has said, first be a channel, and that primal requisite is not satisfied by the preexistence of what the Department of Engineers has aptly called "the flats" or mud banks of the St. Louis River. Navigation, however extensive or long continued, by canoes, skiffs, and light draught boats, outside of the current of a river, does not and cannot create a channel, where there was no channel previously existing.

Halleck's definition recognizes this as well, in the portion quoted by this court, and likewise set forth in the Minnesota brief,[1] where he says: "the deeper channel may be • • • totally unfit for the purpose of navigation," which is a clear recognition, we think, that the channel exists independently of navigation, and may exist and navigation be impossible. For if navigation and navigability are an essential element of the definition of the channel, the author would be guilty of the obvious absurdity of describing something whose very existence was dependent upon its navigability and navigation as being "totally unfit for the purposes of navigation,"—a plain contradiction in terms.

The sense in which the word "channel" was employed by the supreme court of Illinois in *Buttenuth v. St. Louis Bridge Co.*, 123 Ill. 535, whose reasoning was adopted bodily by this court and so made the law in all boundary cases, clearly appears in the following quotation from p. 552:

> "Commercial considerations make it imperative, where States or nations are divided by a navigable river, each

[1] Minnesota brief, p. 89.

should hold to the center thread of the main channel or *current* along which vessels in the carrying trade pass. That is the 'channel of commerce,'—not the shallow water of the stream, which, at some seasons of the year, may be impossible of navigation,—upon which each nation or State demands the right to move its products without any interference from the State or nation occupying the opposite shore."

The correctness of this construction of the term is again emphasized in the subsequent case of *Keokuk & Hamilton Bridge Co. v. State of Illinois*, 145 Ill. 596, illustrating and emphasizing the necessity for the existence of a current or movement of water as an essential element of a channel, or rather, the synonymous character of "current" and "channel" in boundary cases. It is said at p. 603:

> "Where the middle of a navigable river becomes the boundary line between two States, as was the case with Illinois and Iowa, the middle of the current or channel will be regarded as the boundary line."

That this is likewise the sense in which the term is understood and employed by the Supreme Court of the United States appears from its decision in the more recent case of *Washington v. Oregon*, 214 U. S. 205, where the following extremely pertinent language is used, p. 216:

> "There must be in the first instance a channel—that is, a flow of water deep enough to be used and in fact used by vessels in passing up and down the river."

This is a clear recognition of the element of current, or movement, or flow of water in a defined direction and of appreciable quantity. There has been nothing in the decisions of this court subsequent thereto in any way to narrow, modify, restrict or negative this definition.

(b) Review of testimony as to current.

We approach the consideration of the testimony offered by Minnesota as to navigation from the point B to C, or C to B, with a view of ascertaining whether this vital element of a flow of water or current, or in other words, a channel, in the sense employed in fixing boundaries, extended between these two points at all.

The exigencies of Minnesota's theory that these waters constituted a portion of the lake and were not a river at all required that the existence of any currnet should be negatived. Consequently, we find much testimony devoted to a denial that there was any current, below Big Island. Fortunately, however, the court judicially knows, from the unbiased record made by David Thompson, antedating this controversy by over a hundred years, that "the River flows with a moderate current into Lake Superior,"[1] which he had calculated more definitely as "21 miles of current at 15 inches per mile equal to 26 feet 3 inches"[2] (the fall from Fond du Lac to the Entry). This court, forty years earlier than the taking of testimony in the present action, had found as "a fact not denied that there is a current from the river through both these bays."[3]

That there was a current, therefore, through these waters must be taken as undisputed. Needless to say, its existence is amply and fully corroborated by a large volume of oral testimony. This current divided just above Big Island, and the division of the current at this point created two channels, one of which passed to the west and north of Big Island, and the other to the south and east. We believe the testimony absolutely without dispute that the current, and consequently the channel to the north of Big Island continues uninterruptedly

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[1] David Thompson's Narrative, by J. B. Tyrrell, p. 285.
[2] Id., p. 287.
[3] *Wisconsin v. Duluth*, 96 Wis. 379, 380.

to the base of Grassy Point, and then curving with the contour of its shore line proceeds to the extremity of the Point, which was frequently referred to as "deep water opposite Grassy Point." This we think is established emphatically by the testimony of witnesses for both Wisconsin and Minnesota.

We have subjected the testimony of Minnesota's witnesses to careful scrutiny, and we think this court will scan it in vain for so much as a syllable indicative of the existence of the primary requisite of a boundary channel in the area from C to B. There is nothing even remotely warranting the inference that any current flowed between these two points; consequently there could have been no channel. Navigation to some extent there may have been, but such navigation, even if preponderant, in "the shallow water of the stream" did not constitute the same a channel, for in the absence of current there is no channel.

Considering the testimony of these witnesses in a paragraph, we find that Martin Wheeler, C. A. Krause, B. F. Howard, H. G. Inman, J. H. Norton, George T. Lloyd, C. W. McManus made mention of neither current nor margin, sides, bed, nor bank. Albert Swenson, D. E. Stevens, and Alexander McDougall testified to a current going either way. F. A. Brewer found no real current. John G. Howard merely "staked out the best water along through the turn."[1] B. F. Howard used to "hunt up the best water and get in here."[2] Asked if there was a well defined channel, he said: "I don't know,"[3] while Frank A. Brewer stated that it was "none too well" defined.[4] Captain Jeffry found the current an obstacle in returning to the cut-off from below Big Island,[5] while John Howard bore

[1] R. p. 66, fol. 44.
[2] R. p. 168, fol. 211.
[3] R. p. 165, fol. 206.
[4] R. p. 267, fol. 375.
[5] R. p. 997, fol. 1561.

witness that the current "comes down strong"[1] to the northwest corner of Big Island. To the Merritts, as usual, we are indebted for the clearest exposition of the situation. Alfred Merritt testified that the current "follows the main channel down the river,"[2] while the well informed and intelligent witness, Leonidas Merritt said:

> "When you get down here (indicating), the old channel turned, of course, hugged this shore, and here was a point—trend of the shore always directs the channel."[3]

And covering the matter in fuller detail through the area in which we are interested, he employed the words already twice quoted:

> "Why this river came down kind of bank gravel probably or something. There's an island, ain't it (indicating)? Then it took off just as channels always do,—it took its trend off where it butted against this and struck something else here (indicating). The trend of the shore governs the channel of the stream wherever there is any current. For instance a stream naturally takes the belly, as we call it, of the shore where the shore trends in; then the channel will follow that until it strikes some obstruction or comes to some point and then it will cross over exactly as this bend indicates. If that bend is sharp it will cross sharp. If it is more slanting down river it will cross until it strikes something else and then it will come back. Wherever there is any current the trend of the shore always regulates the deepest water and throws that current to the point that has made the deepest water?"[4]

Finally, in one clean cut sentence he gave expression to the principle of law and of physics, whose application to the facts in hand wholly negatives and destroys Minnesota's theory that there was a channel from B to C. He said: "There could be a channel

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[1] R. p. 73, fol. 54.
[2] R. p. 139, fol. 163.
[3] R. p. 91, fol. 83.
[4] R. 104, fol. 105.

wherever there is a current, you know."[1] That exactly states our conception of the law, and conversely, where there is no current, there could be no channel.

All that was said in our discussion earlier in the brief, at page 151, relative to the proposition that the line of deepest soundings conforms to the course of the curving shore line, sustains with equal force the proposition now before us.

c. Acquiescence, so far as shown, establishes boundary line contended for by Wisconsin.

We think the proof completely fails to establish that traffic going north of Big Island went in greater volume over the line from B to C, as contrasted with the so-called Milford or main channel. Further, assuming that traffic passing over the line from B to C greatly preponderated over that which went through the Milford channel or the main channel, we contend, that there was an entire want of evidence establishing or identifying the course of navigation, loosely described as going from B to C, as being in a "channel" in the sense in which that word is used in boundary line disputes.

(a) Acquiescence defined.

Passing from the consideration of these two propositions, we find that reliance appears to be placed by Minnesota upon certain evidence which it is argued establishes that the people of the two states have acquiesced in the location of the boundary line at a point midway between the banks of the water.

That long acquiescence may effectively operate to establish a boundary between states is clear. The abstract rule to that effect set forth in cases cited in the Minnesota brief is not subject to dispute, but the statement of this general rule furnishes little guide or assistance in determining what constitutes such

[1] R. p. 104, fol. 105.

acquiescence. After reviewing the authorities, the court in *Moore v. McGuire*, 142 Fed. 787, 800–801, continues:

"From these authorities, the conclusion reached by the court is that a state may lose its sovereignty and jurisdiction over its territory by prescription and acquiescence whenever these facts are clearly established. The authorities do not agree as to the length of time for which such acquiescence must continue before there will be a loss of jurisdiction. Some eminent writers on international law have suggested a period of 50 years, but I am of the opinion that the safest rule to accept would be that of the common law, that in order to acquire title by prescription the exercise of ownership must have been for such length of time that 'the memory of man runneth not to the contrary.'

"Do the facts in this case show such acquiescence on the part of the state of Mississippi, and are the acts of the state of Arkansas relative to this island such, and have they been for such length of time as will estop the state of Mississippi from now claiming its own?

"In De Bussche v. Alt, 8 Ch. Div. 286, 47 L. J. Ch. 381, 38 L. T. 370, Lord Justice Thesiger defines acquiescence as follows:

> "'If a person having a right and seeing another person about to commit, or in the course of committing, an act infringing upon that right, stands by in such manner as really to induce the person committing the act, and who might otherwise have abstained from it, to believe that he assents to its being committed, he cannot afterwards be heard to complain of the act. This, as Lord Cottonham, in Leeds v. Amherst, 2 Ph. 117, 16 L. J. Ch. Div. 5, 10 Jur. 956, said, is the proper sense of the term acquiescence, and in that sense it it may be defined as acquiescence under such circumstances as that assent will be reasonably inferred from it, and is no more than an instance of the law of estoppel by words or conduct.'

"In Scott v. Jackson, 89 Cal. 262, 26 Pac. 899, the court defined acquiescence to be:

> "'Where a person who knows that he is entitled to impeach a transaction or enforce a right neglects to do so for such a length of time that, under the cir-

cumstances of the case, the other party may fairly infer that he has waived or abandoned his right.' ''

(b) Minnesota's main reliance mostly real estate dealers' maps and maps on which state line was mere random line.

What acts of estoppel then are relied upon, from which it may be fairly inferred that the state of Wisconsin has "waived or abandoned" its rights? We find that the principal reliance in this respect is placed upon the introduction of several maps which purport to delineate a line of boundary between Wisconsin and Minnesota. If our count be correct there were in all twenty-one of such maps. Only four of them, however, appear to have been published prior to the important year 1885, when the first detailed survey of the natural channel of the St. Louis River, reporting and referring to the same as the boundary between Wisconsin and Minnesota, was made; or prior to 1887, when the legislature of Minnesota, representative of its sovereignty, committed that state to the location of the boundary line by its decisive act in placing the dock line along "the natural channel of the St. Louis River," which is but another expression for the state line between Wisconsin and Minnesota.

Two of these maps may be put out of account, as they were maps published by James Bardon, who appeared and gave his testimony with reference to them, indicating that they represented **no conscious effort to fix a state line with accuracy** at all,[1] but were mere random lines.[2] There is nothing in the testimony to indicate that the geological survey map, published in 1877, which is Minnesota's Exhibit 50, was based on any question or consideration of the state boundary. And Minnesota's Exhibit 25, published in 1882, was a newspaper

[1] R. p. 773, fol. 1200.
[2] R. p. 789, fol. 1227.

map, which doubtless merely repeated the delineation on the Bardon map. The maps published subsequent to 1885 and 1887 may, we think, be disregarded entirely because, as we shall presently see, much more efficient considerations in the determination of the boundary line had then come into being. For the most part, they appear to have been mere real estate dealers' maps, local atlases, based very largely on a map of Mr. Merritt, whose production was the result of a misconception as to the character of the water.

And these unofficial, inconclusive maps are fully balanced, we think, by Wisconsin's Exhibit 55, which was a portion of Roe's Atlas, showing the city of Superior and Douglas County, which appears to have been published in the year 1891. Upon this map we find the established dock line in St. Louis Bay, and while the words do not continue, the lines extend around Grassy Point past Fisherman's Island, to which, as the court will recall, the dock line on the Wisconsin side had at that time been established by the federal government. And in the natural condition of the river, of course, the dock line marked the extent of Wisconsin's territory.

Wisconsin's Exhibit 60 was a map of Duluth, from an atlas of the same publisher, the significant portion of which appears to have been published in 1890, three years before the dredging of the channel, and upon this the channel is plainly indicated, just where Wisconsin contends that it was located.

Wisconsin's Exhibit 61 was from an atlas published on the Duluth side. The date of copyright on the face is somewhat uncertain, but this likewise shows the old channel, as did the two preceding maps.

(c) United States Geological Survey map "based on the best information available," shows boundary as Wisconsin contends.

The effect of Minnesota's Exhibit 57, which was a soil map of Northwestern Wisconsin, and Exhibit 58, which was a geological map of the west end of Lake Superior, and on which the state line was drawn, and the effect of all of the other maps introduced in evidence by Minnesota, and referred to by them, is wholly negatived by Wisconsin's Exhibit 52, which is significant in that it represents the cooperative understanding of the State Geologist of the state of Wisconsin and the State Drainage Commission and the acting State Drainage Engineer of Minnesota, confirmed by the United States Geological Survey. Upon the map it is stated that it was surveyed in cooperation with the States of Wisconsin and of Minnesota. The court will note further that it is the first, indeed it is the only, map in evidence showing the docks or improvements constructed in the disputed area, and also undertaking or purporting to show a state line. Prior to the construction of these docks, all these factors of acquiescence set forth in *Missouri v. Kentucky, supra,* were absent here. There were no people residing in the disputed area and no place for them to reside; there was no service of process by either state; no arrest of criminals; no taxation of property appearing above the surface of the water. In short, prior to the construction of the docks, there was no definite proof of the exercise of any act of sovereignty; by either state, or occasion for the exercise of sovereignty; nothing that would have made an accurate delineation of the state line of particular significance or importance. As very aptly stated in Minnesota's complaint:

> "all of said submerged land, was largely in a wild, unimproved condition and without any permanent improvement,

and very largely without any improvement whatsoever, either permanent or temporary."[1]

This map, then, which is the only map introduced in evidence on either side that shows both the docks and the state line, as appears from the portion thereof herewith reproduced, places it where the Department of Engineers had placed it, and where Wisconsin contends it always ran.



Portion of map, Wis. Ex. 52, showing "location of the State boundary line • • • based on the best information available," following survey of Superior quadrangle in 1914–15 by U. S. Geological Survey, "in cooperation with the states of Wisconsin and of Minnesota."

And as to this map of the area which had been "surveyed in cooperation with the States of Wisconsin and of Minnesota," it is certified by the Director of the United States Geological Sur-

[1] R. p. 5, fol. 11.

vey "that the location of the State boundary line shown thereon is based on the best information available." The high degree of authenticity inhering in a map of such character appears from the testimony of Mr. Lawrence Martin, who testified with reference to the United States Geological Survey that it was the "chief map-making department" of the federal government; that "they always show the boundaries, the state and county and township boundaries • • • with the greatest accuracy,"[1] exhausting all available information in order to make the map. And upon cross examination, having confirmed their accuracy, he was asked and answered as follows:

> "Q. And when they have a boundary question they have that accurately defined, so there is no question about the boundary; is that true?
>
> "A. I should take the boundary as it was drawn on the United States Geological Survey map. I should take the boundary as drawn on the United States Geological Survey map as the final authority unless there had been adjudication of that specifically afterwards."[2]

(d) Oral testimony as to understanding of state line vague, indefinite; shows no element of acquiescence.

Apart from these maps, the oral testimony upon the subject is represented by five witnesses, who are referred to in the Minnesota brief. The first, John G. Howard, as an examination of his testimony has already disclosed, on cross examination completely disclaimed ever having given any thought to the question of the state line, and denied any knowledge as to its recognition as such. Leonidas Merritt, whose maps were not published until after the state of Minnesota had affirmatively registered its conception of the location of the main or natural

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[1] R. p. 377, fol. 551.
[2] R. p. 379, fol. 554.

channel of the St. Louis River by the dock line law of 1887, explains the error into which he fell in the location of the boundary line by his testimony, the significant portion of which is twice quoted in Minnesota's brief:

> "We had a clear idea, I think, that these bays were a portion of the lake and that we made the division there according to that."[1]

The testimony of Alfred Merritt is colored by the same mistaken notion that the waters were to be treated as a part of the lake, and not of the river. The testimony of F. A. Brewer was carefully qualified as to the general recognition of the boundary line, by limiting it to the best of his knowledge.[2] But inasmuch as he came to Duluth only in 1880, just five years prior to the very decisive Parkinson survey of the state line, and only seven years preceding the establishment of the Minnesota dock line, his knowledge was necessarily of a most limited character, and has at best but little value, especially when negatived by these two decisively contrary factors. Luther Mendenhall, who identified three maps, Minnesota Exhibits 23, 24, and 25, upon each of which a boundary line was shown, and testified, "That was understood to be the boundary line, general understanding,"[3] on cross examination, however, had fully divested them of any significance as tending to establish acquiescence, stating that he never knew any state line questions to be referred to any of these lines to determine.[4]

The court can only conclude upon this testimony, consisting as it does of one witness who abandoned any pretense of knowing anything about the state line; two witnesses who thought the waters part of the lake, and logically enough fixed the

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[1] Minnesota brief, p. 56, p. 66.
[2] R. p. 263, fol. 368.
[3] R. p. 272, fol. 383.
[4] R. p. 273, fol. 384.

boundary in the middle; one witness who had scant opportunity for knowledge, and one witness who negatived the essential element of acquiescence, that, as stated with reference to much stronger testimony, in *Arkansas v. Tennessee*, 246 U. S. 158, at p. 172, it—

> "falls far short of that long acquiescence in the practical location of a common boundary, and possession in accordance therewith, which in some of the cases has been treated as an aid in setting the question at rest."

(c) Seven elements of acquiescence establishing state line as Wisconsin contends.

Counsel for Minnesota, however, state a proposition which really embodies the elements of acquiescence.

> "The United States Government, in the establishment of dock lines and harbor improvements, recognized the midway line as the natural dividing line, and in this the States and the people thereof acquiesced."[1]

Were this statement grounded upon a correct apprehension of the facts, it would indeed constitute a decisive act which, if acquiesced in, might, standing alone, well determine the boundary; but unfortunately for Minnesota, while the element of acquiescence so pointed out does exist, the facts all lead to a directly contrary result from that contended for by her. These are the elements of acquiescence already narrated in their appropriate place, which need only be summarized to demonstrate the recognition by Minnesota of the existence of the boundary line where Wisconsin and Wisconsin's witnesses place it.

First, we have the survey by Parkinson in 1885 of the main channel of the St. Louis River, expressly reported as constituting "for the distance surveyed, the boundary between the States of Minnesota and Wisconsin."

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[1] Minnesota brief, p. 65.

Second, we have the adoption two years later by the Minnesota legislature of a dock line, following the "eight (8) feet curve of depth of the natural channel of the St. Louis River."

Third, the adoption of this dock line substantially unchanged by the federal government in 1890, through the active solicitation and procurement of the commercial organization of Duluth.

Fourth, the addition of a dock line on the Wisconsin side, 600 feet distant, running parallel with the dock line so established by the Minnesota legislature in 1887, thus recognizing the right of residents of Wisconsin to fill in solidly the area from Fisherman's Island to this point 600 feet south of the Minnesota dock line; in other words, all of that portion of the suppositious Minnesota channel lying between B and C.

Fifth, almost simultaneously with the adoption of this dock line, with reference to the main or natural channel of the St. Louis River, the passage of a law for its survey by Congress, specifically referring to it as "the State line between Minnesota and Wisconsin."

Sixth, the survey of such state line by the Department of Engineers, and its report to Congress, finding and describing the state line exactly as contended for by Wisconsin.

Seventh, the appropriation and expenditure of considerable amounts of money by Congress, subsequent to such survey, with the full knowledge of all parties concerned that such funds were expended in what was the intended permanent improvement of the state line, definitely and finally fixing and establishing an improved channel over its course; and still no protest by any Minnesota member of either house of Congress; no memorial, petition or remonstrance from the legislature of Minnesota, or the governmental or commercial organizations of Duluth; on the contrary, active, insistent, and continuous demands on the part of the local residents for the speedy prosecution of the work.

Here, then, for an unbroken period of almost twenty years, the factors and elements of real acquiescence were present, beginning

with the survey of 1885, upon which, beyond peradventure, Minnesota fixed her dock line, and continuing in unbroken line until April 1, 1903, when the Chief of Engineers called the attention of the Governors of Wisconsin and Minnesota to the departure of the new channel from the state line. There was no change in the conception of the Department of Engineers, of Congress, of the legislature of Minnesota, or the residents of Duluth, as to where the state line lay.

The "main channel of the St. Louis River," or the boundary between Wisconsin and Minnesota, was thus established by surveys of three different departments of the United States government prior to the taking of testimony in the present action, and prior to the institution of the action itself. It was twice located by the corps of engineers of the War Department. It was located under the instructions of the commissioners of the General Land Office, and finally it was located by the United States Geological Survey. All three departments concurred in locating it in exactly the same place. The presumption is that these surveys were correct. That presumption was fortified by the action of the Minnesoa legislature in 1887 in establishing the dock line along the same course so surveyed.

To our minds, the presumption of accuracy arising from these three surveys and the action of the Minnesota legislature has in no sense been refuted or overthrown by the testimony of Minnesota's witnesses. It has in no particular been even shaken. So that the burden arising out of this presumption, combined with the presumption in favor of the line of deepest soundings and the fact that the channel contended for by Wisconsin was the only one which bore the earmarks of a "channel" has not been overcome. Upon Minnesota's own showing the court must decide this controversy against her.

6. *Wisconsin witnesses, of same character as those for Minnesota, and nearly double in number, absolutely corroborate and confirm uniform trend of official reports, surveys, and locations of boundary line.*

But were it otherwise, many witnesses testified on behalf of Wisconsin, and their testimony amply corroborates and sustains the presumption above noted, and for the convenience of the court we briefly review this testimony.

a. Hiram Hayes, James Bardon, Victor Desimval, John Stevens and J. H. Darling previously noted.

The testimony of Hiram Hayes, James Bardon, Victor Desimval, J. H. Darling and that portion of the testimony of John Stevens relating to navigation antedating the experience of Minnesota witnesses, has already been fully presented in an earlier portion of the brief,[1] to which reference is made.

b. E. B. Banks.

Mr. Banks, who appears to have testified in a fair and disinterested manner, is characterized in the Minnesota brief as "an extremely partisan witness,"[2] without anything in the record to warrant the assertion. As a matter of fact, it appears that while his experience in the area above Grassy Point was not extended, there were peculiar reasons why he should have had his attention arrested by all matters concerning currents and channels of the river.

He "was engineer for the Northern Pacific Railway in '81, '2, '3, and '4";[3] and in that connection he prepared a map,[4]

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[1] This brief, pp. 155, 157, 160, 145, 166.
[2] Minn. brief 156.
[3] R. p. 480; fol. 730.
[4] Wis. Ex. 27.

after carefully verifying all government soundings from the Superior Entry to Connor's Point.[1] He found a well defined channel from Rice's and Connor's Points to the Superior Entry[2], his testimony in this respect according with the government maps.

Within a year or two after mapping Superior Bay, he likewise prepared a map of St. Louis Bay,[3] "for the purpose of locating a proposed Northern Pacific Railway bridge across St. Louis bay from what was then known as West Superior to Rice's Point," or rather "from where West Superior now is."[4] His impression was that the data for his map was gathered in May, 1884. This was the basis for the application by the Northern Pacific to bridge the St. Louis River, and so far as he knew, their application was based entirely upon this map. While it is not mentioned in the record, the strikingly accurate character of Mr. Banks' recollection is borne out, as we have already seen, in our discussion of the legislation and proceedings that led up to the construction of this bridge,[5] where we found that the original act of 1873 required the ascertainment of all the data which Mr. Banks gathered, and the presentation of a map to the Department of War. As we saw there, the president of the railroad had addressed a communication with reference to the matter to the Secretary of War in April, 1884, and the bridge appears to have been built in the winter of 1885. Mr. Banks is entirely borne out by the terms of the act and correspondence set forth, in his statement that the draw was placed in this bridge on the Duluth side "on account of its being across the natural channel."[6] It appears, likewise, that

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[1] R. p. 481; fol. 731.
[2] R. p. 482; fol 733.
[3] Wis. Ex. 28.
[4] R. p. 483; fols. 735–6.
[5] This brief, pp. 117, 118.
[6] R. p. 485; fol. 739.

Mr. Banks had taken soundings "very close up to Grassy Point," in connection with his work, although they were not placed on the map.[1] He had also built one railroad bridge across the St. Louis River, and taken a large number of soundings for the purpose of locating another, both, to be sure, upon the river above any possible zone of controversy, but being a trained and competent engineer who had had his attention specifically directed to the questions of channels and soundings "very close up to Grassy Point," on one side of the zone of controversy, as well as on the other, we should naturally expect that his observations and conclusions were entitled to more consideration than those of the mere casual haphazard observer.

We think, in view of his experience, his testimony was not partisan, but decidedly reticent. He stated that he "frequently went to Fond du Lac on excursions; every year once or twice or three times, from 1890 to 1900, and since that time,"[2] and that, by reason of his knowledge and experience as an engineer, he always tried "to observe things when * * * on a trip like that."[3] By reason of his familiarity with government soundings and the location of channels, he had undertaken to color in yellow on the so-called Dever map the main channel of the St. Louis River above Grassy Point. In answer to a question, he located the course taken by excursion boats, as follows:

> "A. After passing Grassy Point we took a sharp turn to the right and proceeded northwesterly along the westerly shore of Grassy Point and came quite close to the Minnesota shore, within five or six hundred feet, at what was commonly called Millford; then the channel swung more to the south and afterwards approached the shore again near what is now known as Ironton.
>
> "Q. You mean the Minnesota shore?
>
> "A. The Minnesota shore. The channel, as I remember

[1] R. p. 486; fol. 739.
[2] R. p. 486; fol. 740.
[3] Id.

it, in passing up and down the river, conforms to that part of this map colored yellow.

"Q. When did you do that coloring, Mr. Banks?

"A. About a year ago.

"Q. For the purpose of indicating the main channel?

"A. Yes."[1]

On cross examination it appeared that two or three years earlier, he had been employed by the city commission of the city of Superior, for the specific purpose of locating the state line, to ascertain how much of the Carnegie dock was on the Wisconsin side of the old channel.[2] Mr. Banks had likewise prepared the cross sections of the river above Grassy Point, as shown by the Meade map, introduced in evidence and already discussed.

c. Lewis La Chappelle.

Lewis LaChappelle ran an excursion boat for four months in 1892,[3] the extent of his experience, therefore, being identical in length of time and substantially of the same character as that of John H. Norton, who testified for Minnesota. Apparently he ran on the boat every day after the season opened in 1892, acting as captain until July, and clerking and mate the rest of the season, until sometime in September. He steered the boat when it was his watch. He described his course:

"A. We went about south up to Grassy Point or to the turn at Grassy Point.

"Q. And then what course did you take?

"A. We went about northwest, I think, after we made the turn at Grassy Point.

"Q. How close to Grassy Point did you follow?

"A. We kept very close to the Grassy Point side till we got up to near the old Blast Furnace."[4]

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[1] R. p. 487; fol. 742. The map thus referred to was introduced as Wisconsin's Exhibit 29.

[2] R. p. 493.

[3] R. p. 527; fol. 805.

[4] R. p. 527; fol. 806.

He was then shown Wisconsin's Exhibit 29, and proceeded to retrace the same course by the map, not as Minnesota's counsel put it, "some course or directions that they took."[1] Nor do we think, as there set forth, "it is very difficult to find from his evidence what he did mean."[2] On the contrary, his testimony, as it appears in the record and as quoted in their brief, is very clear and very definite. No difficulty can arise in interpreting this testimony, unless it is so arranged as to make it appear that the redescription of his course is a continuation, instead of merely a parallel to the first description.

Let the court refer to the map appearing in the Engineers' Report for 1887.[3] We find him starting from the bridge, which of course is the railroad bridge from Grassy Point to the mainland; he then proceeds exactly along the course of the main channel set forth upon this map, the 8-foot curve of which the court will recall was that year adopted by the Minnesota legislature as the Duluth dock line; makes "a turn over here a little, right from the bridge. And after we made that turn there turned about south up here till we got to the second clay bank up here."[4] Then—

> "We turned with the stern of the boat, on that red clay bank as our ranges till we got to the turn down here where the Blast Furnace is, and then we commenced to turn when we got to the end of this what you call Grassy Point. Of course I don't know it now on the map, but there was a smoke-stack down here and a gap in the hill up there from the old Blast Furnace that we used to have for ranges when we turned down there, and when we got outside of the Old Blast Furnace we turned again inside of that little island. I think it was called Snowshoe Island then.

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[1] Minn. brief, p. 160.

[2] Id.

[3] Ann. Rep. of Chief of Engineers, Pt. 3, 1887, op. p. 1944; map reproduced, this brief, between pp. 184–185, supra.

[4] R. pp. 527–8; fol. 806.

"Q. That is the island that is indicated here on this map opposite the word 'Slip'?

"A. Yes; I think that's it.

"Q. And you mean you went northerly of that island?

"A. Yes, sir."[1]

Then continuing his course after passing this island, he was asked and answered:

"Q. And then what course did you take?

"A. Turned down here (indicating) and I think it was southwest or little in that direction; of course you keep turning right along all the way from northwest direction.

"Q. It wasn't a straight course?

"A. No, sir. It was right at this place was weeds just all kind, on both sides. I think there was two rows of these weeds or rushes or whatever you call them; we ran on the inside of the second row of rushes and we turned until we got up to a point here I think they call it Squaw Point. I can't tell it on this map."[2]

This is a perfectly plain straightforward delineation of the course of the main, or Milford channel, beyond Fisherman's Island, in no sense warranting the statement that "it was very difficult to get head or tail to his testimony with reference to this matter."[3]

That he was in error as to the location in feet of the main or Milford channel from Fisherman's Island, because that channel was more than 75 or 100 feet away is perfectly true. From scaling Exhibit 29, we learn that his nearest course to the island would be about 500 feet, instead of 100 feet, while Wisconsin's Exhibit 5, being the map of the island surveyed by Mr. Stuntz, would bring the main channel within approximately 400 feet of the island. But in any event the court will bear in mind that this island was described by all the witnesses to have been a

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[1] R. p. 528; fol. 807.

[2] Id.

[3] Minn. brief, p. 161.

low, marshy place under water a great deal of the time, and its outline and banks no doubt were poorly defined, so that it might readily have appeared to have been a greater distance from the main channel to one person than to another. We question the seriousness of his failure of recollection in this respect, after the lapse of twenty-six years, especially when he testified positively that when they ran in the vicinity of that Snowshoe Island, he was "a little closer the main shore."[1] The range which he selected (the smoke stack of the Blast Furnace[2]), as will appear from the discussion of the testimony of the next witness, shows indisputably that his course was up the Milford channel. He likewise recorded his impression of the cut-off channel:

> "A. I never thought there was any boat of any draft to go the south channel.
>
> "Q. You mean to say that the Barker couldn't go the south channel in 1892?
>
> "A. I wouldn't say she couldn't go.
>
> "Q. But you never tried it?
>
> "A. No, sir."[3]

He had earlier testified—

> "There was two courses; but one was for, as we used to term it, was the short-cut for shallow water boats, for shallow draft boats."[4]

And that—

> "among sailors used to call it the cut-off and the main channel. They went up the channel, the main channel, towards the Blast Furnace. They went up the main channel."[5]

In answer to the strictures upon his testimony in the Minnesota brief,[6] where it is sought to make it appear that his naviga-

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[1] R. p. 537; fol. 820.
[2] R. p. 528; fol. 807; p. 537, fol. 821.
[3] R. p. 535; fol. 817.
[4] R. p. 529; fol 809.
[5] R. pp. 529–30; fol. 809.
[6] Minn. brief, p. 163.

tion of the tug Mystic from 1896 to 1900, as detailed,[1] is in some way discredited by the testimony of Captain Stevens, we suggest merely this: that this Milford, or main channel had been improved in 1893, and that thereafter, certainly, that would be the natural, logical place for a boat drawing 10 feet of water to run. Nor do we think it so singular that he did not know that the channel had been dredged in 1893. On the contrary, the fact that he returned to navigate this channel after an absence of four years, and that the dredging made no impression upon him absolutely confirms and corroborates his testimony that this was the situs of his previous navigation. Had he run the boat over a different course after his return, his attention would certainly have been directed to the fact of the change. As it is, his ignorance of the dredging merely confirms the continuous location of the main navigated, navigable channel, as being exactly the same, both before and after the dredging. In any event, Captain Stevens did not afford a very high criterion of accuracy himself.

d. Edward Smith.

Edward Smith, characterized truthfully perhaps by the commissioner as an illiterate witness, and of whom Mr. Gard said at the hearing, "he didn't testify very intelligibly so it can be read with any intelligence,"[2] was none the less, we assume, honestly trying to present to the court his best recollection of the situation as it existed. His experience as narrated indicated that he had gone up the river on the S. P. Barker in 1889. He was firing and the boat was "taking out excursion parties running up the river. • • • in three months' time we used to go up twice every Sunday • • • then during the week probably once or twice."[3] Previous to that he had been up

[1] R. p. 530.
[2] R. p. 549; fol. 841.
[3] R. p. 540; fols. 825–6.

on the tug Rambler. In 1893 he had gone up as captain on the Steamer Hunter. In addition to this, he had had the experience which we consider much more important, although not stressed or emphasized in his testimony, of having helped take soundings "clear up to Fond du Lac," at the time when Mr. Silvey was in charge.[1]

The court, of course, will recall from its examination of Wisconsin's Exhibit 31–C that the survey in which Mr. Silvey was associated was that of 1885, sometimes referred to as the Allen survey, or the Parkinson survey, covering, as stated by Major Allen in his report, "for the distance surveyed, the boundary between the States of Minnesota and Wisconsin,"[2] the results being mapped in the report for 1886, with the specific designation, "Main channel St. Louis River."[3] It would be very singular, indeed, if after these experiences he would not have been well qualified to locate the main channel of the St. Louis River, both from the standpoint of his actual experience in navigating, and from his experience in taking soundings of such main channel. We think, moreover, that if his testimony is read by the court in connection with maps, upon which the objects referred to by him appear, and of which he did not have the benefit in testifying, his delineation of his course will compare very favorable in accuracy, intelligence, and definiteness with the testimony of some of the witnesses of Minnesota, so much touted for their superiority. Detailing his course from the gateway,—

> "till we got on the east side of Grassy Point where there is opening, rushes, between there, got around Grassy Point on the west side and then come up northerly direction parallel with Grassy Point.
>
> "Q. Did you have any particular range point there?

[1] R. p. 548; fol. 838.
[2] Rep. of Chief of Engineers, 1885, Pt. III, p. 1961.
[3] Report of Chief of Engineers, 1886, Pt. III, op. p. 1632.

"A. We had a smoke-stack just then on the main shore where we were heading.

"Q. Do you know that smoke-stack?

"A. I couldn't describe what smoke-stack that would be, but we would get around this Grassy Point and then we land up with the smoke-stack.

"Q. How far would you go?

"A. Oh, we would go within half a mile, quarter mile, from the main shore, and then swing off.

"Q. In what direction would you swing off?

"A. Well, it's gradual direction, and then we go over a narrow place almost swing southerly direction till we get over the crossing and then we went up westerly direction."[1]

Subsequently he seemed to remember the name of the smoke-stack also.

"A. Yes; in here; there was a smoke-stack here. I don't remember what smoke-stack that would have been—Blast Furnace; something of that sort, I guess.

"Q. And then after you got up near the Minnesota shore—

"A. This little dock here, small dock; then we swung around here.

"Q. Swung around in what direction?

"A. Westerly direction about."[2]

We submit that if the court will read this testimony with Wisconsin's Exhibit 31–E before it, it must conclude that he has given a perfect delineation of the channel as set forth upon that map, and as appears in the contemporary reports of the War Department. The smoke stack of the blast furnace, the court will observe, would be the most natural object in the landscape that could possibly be selected in steering a course along the Milford channel from the lower tip or extremity of Grassy Point. Not only this, but his statement that they would "land up with the smoke-stack * * * within a half a mile,

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[1] R. p. 542, fol. 828.

[2] R. p. 546, fol. 836.

quarter mile, from the main shore, and then swing off,"[1] if a scale be applied to the exhibit, is demonstrated to be a very close, if not an absolutely accurate, description of the distance of the middle of the curve of the channel from the main shore, just opposite the blast furnace. And the court will also note that from this point he would swing off over "a narrow place almost swing southerly direction till we get over the crossing and then we went up westerly direction,"[2] describing with as much exactitude as a much more intelligent witness could do, the course of the channel after turning from the main shore at Grassy Point, approaching the bar shown on the Meade map, and then going over toward the main shore opposite Big Island. The next statement that he was 1500 or 2000 feet from the Minnesota shore when he went up westerly, as the context shows, did not refer to the distance from Grassy Point at all as Minnesota's counsel suggest,[3] but referred to his distance from the Minnesota mainland at the point where he went in a westerly direction on leaving the bar. Exhibit 31–E has traced upon it the north and south meridian in this immediate vicinity, and his description of the direction on leaving this bar corresponds exactly, as the line of the channel after crossing the township line runs as nearly due west as could possibly be described. And applying the scale to the map, on either side of the township line we find that the distance from the Minnesota mainland is just what he says it is, from 1500 to 2000 feet, or approximately 1750 feet.

We think the court will agree that the Meade map, with reference to which it was sought to have him testify, is difficult enough of interpretation, and that it is not at all surprising that he was unable to locate himself upon it; but read in con-

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[1] R. p. 542, fol. 828.
[2] Id.
[3] Minn. brief, p. 165.

nection with a map that showed the objects with which he was familiar, his testimony is both plain and convincing.

We have examined his testimony with great care to find wherein there is anything to warrant the assertion in the Minnesota brief: "he still stuck to it that he went very near to this little island which is directly on the channel G–B claimed by Minnesota."[1] He speaks of Little Willow Island,[2] which the context we think demonstrates is the so-called Tallas Island, lying south of Stanley Avenue, as depicted on Wisconsin's Exhibit 31–E. Again, he refers to "an island on the south side here,"[3] and in both instances he is describing a course that leads to Spirit Lake. By reason of his experience in the survey of the main channel, we think his testimony has added point and definiteness, when he says:

> "A. Yes, we took the main channel; we used the main channel.
>
> "Q. And why did you use the main channel?
>
> "A. Well, that is the deepest for the boats; we used to follow so that we can get up the river.
>
> "Q. Was it called the main channel?
>
> "A. Yes, sir, always known, called main channel."[4]

c. John Shea.

Mr. John Shea is referred to in the Minnesota brief as a man "who testified directly contrary to the testimony of Mr. Brewer."[5] Much is sought to be made of this supposed variance between their testimony.[6] The fact was that he testified to navigating the waters above Grassy Point in 1887 and 1888; that he usually took the cut-off. This is quoted fairly enough.[7]

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[1] Minnesota brief, pp. 165–6.
[2] R. p. 544, fol. 833.
[3] R. p. 546, fol. 836.
[4] R. p. 548, fol. 838.
[5] Minnesota brief, p. 167.
[6] Id., pp. 175–176.
[7] Id., p. 169.

Mr. Brewer had testified that the cut-off "was more in common use."[1] So far they are in absolute accord then. But to say that they agreed in this respect by no means justifies the conclusion of the Minnesota brief, that he used "the channel claimed by the State of Minnesota,"[2] because this is not the channel which Minnesota must establish in order to make good her claim; it is, as we have seen, a channel largely lying wholly inside the state of Wisconsin.

The contradiction presumably revolves about the use of the tug Rambler. Mr. Shea testified that she drew between 9 and 10 feet of water,[3] while Mr. Brewer testified that the Rambler drew "around nine feet when she was loaded."[4] Mr. Shea testified that with this deeper draft boat he navigated the main channel in 1889.[5] Mr. Brewer's testimony was that they "undertook to go up what is know as the deeper channel,"[6] which would ordinarily be equivalent to calling it the main channel. It will be borne in mind, of course, that Mr. Brewer gave this testimony after having testified earlier that he never saw the channel used. Further, he then referred to the channel B–C as "the channel that was commonly in use,"[7] although he had earlier testified positively that the channel to the south of Big Island "was more in common use."[8] So that Mr. Brewer himself was not a model of exactitude, and the court would scarcely consider Mr. Shea impeached for failing to agree with him at all points. The sum and substance of their contradiction then was that Mr. Shea said he succeeded in navigating the Rambler through the main channel, although stating frankly enough, "we wouldn't be

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[1] R. p. 260, fol. 365.
[2] Minn. brief, p. 169.
[3] R. p. 553, fol. 847; R. p. 563, fol. 864.
[4] R. p. 943, fol. 1472.
[5] R. p. 553, fol. 847.
[6] R. p. 939, fol. 1466.
[7] R. p. 939, fol. 1466.
[8] R. p. 260, fol. 364.

exact on our courses; sometimes we run aground,"[1] while Mr. Brewer testified that they did not succeed on one occasion. But that Mr. Shea might have gone up there at other times with the Rambler would have been entirely possible. Because, as appears from his cross examination, Mr. Brewer did not own the Rambler and Shea was working for him "possibly ten per cent"[2] of the time. He testified:

"Q. That is the only trip that he made up there with the Rambler?

"A. As far as I know.

"Q. Who owned the Rambler?

"A. I can't recall his name. I knew him very well. It's too long—

"Q. Was the Rambler working for you all the time?

"A. No, sir. She was towing logs from the lake. She was a lake boat.

"Q. Now, Mr. Brewer, you don't know, then, whether Captain Shea went up there on the Rambler at other times?

"A. I know that the captain of the Rambler wouldn't go up there, wouldn't try it."[3]

Both, however, agreed that the Rambler did not and could not have taken the Minnesota channel from C to B.[4] The primary difference between their testimony is that Mr. Shea is absolutely borne out by contemporary records, and Mr. Brewer is not.

By 1889, the dredging below Grassy Point was pretty well completed. It must have been, to enable this 9 foot boat to get above Grassy Point, and as early as 1887, two years prior, the War Department had made its record with reference to the channel described by Mr. Shea, saying: "There is almost uninterrupted navigation for vessels drawing 12 feet of water, as far as the log boom below Fond du Lac."[5]

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[1] R. p. 559, fol. 856.
[2] R. p. 943, fol. 1472.
[3] R. p. 942, fol. 1471.
[4] R. p. 943, fol. 1472.
[5] Rep. of Chief of Engineers, 1887, Pt. 3, p. 1939.

Shown the map that Mr. Banks had prepared, detailing the main channel above Grassy Point, he pointed to the yellow shading on the map as "the main channel that we used to take with the deep draft boats."[1] He also located the course as running nearer the Minnesota shore, between Snowshoe Island and the mainland. "They always used to say main channel or the cut-off."[2] "We always went along that way when we went the main channel, close there to Millford."[3] On the whole, we think it fair to say that his testimony corresponds exactly to that of the two leading Minnesota witnesses, the Merritts, who identified the same water as the main channel, and also testified that the common route of navigation was through the cut-off, lying for the most part inside the state of Wisconsin, the navigation of which could have no relevancy or bearing in determining where the line *between* Wisconsin and Minnesota lay.

f. Walter J. Cayo.

We think the most significant portions of the testimony of Walter J. Cayo are those where he was not seeking directly to testify as to the issues in the case, but as an unconscious reflection of the usage to which he must have been accustomed in the days of his navigation, made use of this terminology:

> "Q. Now, in sailing your boats up the river, that you have mentioned, what channel did you take?
> "A. The old natural river bed."[4]

He made a sketch of the course as he remembered it, introduced as Wisconsin's Exhibit 47, and describing his course, said:

> "From St. Louis Bay running through the Grassy Point bridge and around by Grassy Point by the Carnegie Fuel and the Steel Company dock is now to alongside of the brickyard, the main channel on the Minnesota side by Iron-

[1] R. p. 555, fol. 851.
[2] R. p. 554, fol. 849.
[3] R. p. 566, fol. 868.
[4] R. p. 569, fol. 873.

ton, Spirit Lake and St. Louis River, going on up the main channel."[1]

And more significantly:

"I always took the main river on the Minnesota side."[2]

From his cross examination, it appears that his first two boats were the Buffalo, which drew nine feet six, and the Fisk which drew 9 feet of water.[3] It appears, as to the Buffalo:

"I was on her five years, from 1890 to about 1895; and we didn't sail the Fisk regularly. I simply made a trip or two up the river when possibly my boat was broken down or something; but I knew I had been on her up the river."[4]

His experience would therefore have seemed to have been confined to these 9 and 9½ foot boats prior to the dredging.

His recollection, however, was very clear and definite as to the so-called Minnesota channel.

"Q. I want to call your attention to the red line starting at a point marked A, running up past G, running to B, and then to C. Do you remember that channel?
"A. No, sir.
"Q. Did you ever go over that?
"A. No, sir.
"Q. Did you ever hear of anybody going over it?
"A. Not that I know of.
"Q. There wasn't any channel there at all?
"A. No, sir."[5]

He did testify to the use of the cut-off with a stern wheeler Henrietta, drawing about 4 feet of water.[6]

It appears, as was very natural, that his recollection was some-

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[1] R. p. 571, fol. 875.
[2] Id.
[3] R. p. 574, fol. 881.
[4] R. p. 575, fol. 881.
[5] R. p. 578, fol. 887.
[6] R. p. 580, fol. 890.

what confused after the lapse of many years, as was that of most of Minnesota's witnesses, but as he phrased it—

> "I can remember the old natural channel on the Minnesota side."[1]

And again:

> "I never had any chart of the river, except the old natural river."[2]

g. James P. Cole.

James P. Cole, as appears from his testimony, had first gone up the St. Louis River thirty-four years prior, or in 1883, with a boat drawing about 8 feet of water. During the three years that he ran this boat, he might have made eight or ten trips with her.[3] During the seven years following his experience with the J. H. Upham, he navigated another tug drawing 8½ feet of water, which would bring his experience to 1893. He alternated with another boat drawing 8½ feet. He navigated a fourth boat, but not until after the channel was dredged.[4] Apparently his experience with all the boats was limited to a few trips each season, but it was sufficient to enable him to identify the main channel, and he described his course after rounding Grassy Point as "down along toward the shore, toward the shore line."[5] There was a channel there which he followed. Subsequent to this navigation, he had assisted in the dredging in the vicinity of the blast furnace, and at that time this channel was filled up.[6] He testified to seeing other boats, that light draft boats took the cut-off channel. The other channel was known as the main channel, "by all the tug

[1] R. p. 580, fol. 889.
[2] Id.
[3] R. p. 586, fol. 898.
[4] R. p. 586, fol. 899.
[5] R. p. 588, fol. 902.
[6] Id.

men, as far as I know.'"[1] He identified htis main channel on Wisconsin's Exhibit 29 as being the shaded yellow area, which he called the old channel. And as to the course of boats, he testified:

> "Well, they all went this way unless they were in a hurry, and then they took the chances in the cut-off. If they were in a hurry they took the chances. But I got on the bottom; very often she would lay down on her side, nearly every time she went through. If she had a tow we couldn't make it, we always had to go around the main channel, around Big Island."[2]

He detailed the course of the cut-off channel, but testified specifically that he had never tried to go the course from B to C.[3] And as to other boats he said, "I never saw any in there, no sir, not around in here,"[4] although he had seen them come up and take the cut-off. He testified as to the depth of water:

> "I know there was always water enough for me to go by the main channel and that is all. I never took any soundings any more than we had a 10 or 12 foot pike pole, and when it got dark we would feel our way, and when we touched bottom we would sheer off."[5]

He did testify that in the course of using the pike pole they never found less than 12 to 15 feet of water in this main channel.[6] But we submit, he made no claim at all to sounding the entire channel, and it appears from practically any of the government maps current at this period, from 12 to 16 feet of water, and even deeper, would be the ruling depth in the Milford channel, except for the one shoal place opposite Fisherman's

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[1] R. p. 589, fol. 903.
[2] R. p. 590, fol. 905.
[3] R. p. 592, fol. 908.
[4] R. p. 593, fol. 908.
[5] R. p. 593, fol. 910.
[6] R. p. 595, fol. 913.

Island. He testified to the possibility of going through 8 feet of water with an 8½ foot boat:

> "Soft bottom, soft mud, we could pound her through. She would roll down on her side but we could pound her through. There was lots of times running in them years we never noticed it when she was on the bottom; as long as we knew there was deep water ahead we made her climb."[1]

His experience in this respect was borne out by Minnesota's witness, Captain Stevens, who testified to his tug touching bottom, and in his testimony appears this question and answer:

> "Q. The wheel has a tendency to dredge out, doesn't it?
> "A. Oh, yes, yes, sir."[2]

h. J. W. Nelson.

J. W. Nelson, whose testimony, with chaste and discriminating diction, is characterized in the Minnesota brief as "the superficial and frothy statements of an egotistical witness,"[3] will, we think, impress the court as a witness with an unusually clear understanding and recollection of the situation of the waters above the point. It appeared that he had been familiar with the waters of the river since the '70's; that he had been hunting and fishing there during all the years, probably twice a month,[4] using two sailboats, one drawing about 3 feet, and another about 6 feet with the centerboard down, the larger one of which he had about fifteen years. He had also gone up on other boats, "probably two or three times during the season."[5] In the fall of the year he went hunting, and he had been up the river every year, but "not of late years."[6] He had been

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[1] R. p. 595, fol. 912.
[2] R. p. 224, fol. 303.
[3] Minn. brief, p. 209.
[4] R. p. 625, fol. 965.
[5] R. p. 626, fol. 966.
[6] R. p. 627, fol. 966.

up half a dozen times on the Barker; he had been up on the Kesota, a side wheeler, ten or fifteen years before the channel was changed; he had been up on the John Pridgeon, which drew 5 or 6 feet.

"Q. Will you state what course they took in going up the river generally?

"A. In the early days?

"Q. Yes, in the early days before '93.

"A. Well, the larger boats would invariably go up what we called the main channel.

"Q. And the smaller boats?

"A. Would sometimes go up the main channel and come back the cut-off."[1]

He gave this very accurate description of the course of navigation around Grassy Point:

"Well, the main channel after you leave the St. Louis Bay you got up kind of south, practically south a little bit, quite close to the Wisconsin shore, and then she would make quite a turn to the west or might say northwest, and there was you might say the dividing of the two channels; boats going down the cut-off would strike the channel at that point."[2]

Shown Wisconsin's Exhibit 1, and asked to designate the main channel, he said:

"If that hadn't been marked in red I should have marked as near as could be possibly done on the same line."[3]

No better proof of his intelligence and independence could be given than in his contradiction of Mr. Darling, as to where the cut-off channel left the main channel, and as counsel for Minnesota concede in their brief,[4] Mr. Nelson was right in his

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[1] R. p. 627, fol. 967.
[2] R. p. 627, fol. 968.
[3] R. p. 629, fol. 970.
[4] Minn. brief, p. 208.

statement that Mr. Darling was "a third of a mile out of the way."[1]

A further illustration of the certainty of his knowledge is found in the following series of questions and answers, in which counsel for Minnesota sought without success to entangle, trap, and confuse him.

> "Q. If these men; that is, the Merritts and the Howards and McManus and Captain Stevens and Captain McDougall, say that that was the channel used by all boats prior to the dredging of the bar in channel H, would you say that they were mistaken, that you were right and they were wrong?
>
> "A. If they say all the boats went up that way I would say they were mistaken.
>
> "Q. I say, boats prior to the time this bar was dredged out in channel H, in 1893?
>
> "A. I don't think all the boats would go that way.
>
> "Q. Well, was that the main channel that was used by the boats until the dredging was done in 1893?
>
> "A. I considered this the main channel.
>
> "Mr. Gard: He points to the channel marked H.
>
> "Q. I didn't ask you that. I asked you whether this was the channel that was used, from A to G, from G to B, and from B to C?
>
> "A. If that was the main channel?
>
> "Q. That was unusually used by the boats, up to the time the dredging was done in 1893?
>
> "A. I don't think it was.
>
> "Q. Then you think if these men so testified that they are mistaken, do you?
>
> "A. I think I am right in my assertion of what I say.
>
> "Q. Then you think they are mistaken, do you?
>
> "A. Yes, on that, yes."[2]

The unfairness of the first question is at once apparent to the court, which will recall that one of the Merritts never knew of any channel B–C at all. Alfred Merritt had gone that way

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[1] R. p. 629, fol. 971.
[2] R. p. 635, fols. 979–980.

once; Captain McDougall had never heard of the channel; Captain Stevens had testified that the cut-off channel was the course usually taken by all kinds of traffic, as had the Howards, McManus being the only witness whose testimony might by any fair construction be held to warrant the assertion that even approximately as much traffic went over the Minnesota channel as went through the cut-off channel. But the question assumes that all these witnesses testified that this channel was used by "all boats." And yet they speak of "his tenacity and stubbornness in sticking to a point, of which he knew little or nothing."[1] He further testified positively that the so-called channel A–G–B–C he would not consider the main navigated and navigable channel.[2]

i. Fred Benson.

Fred Benson was a sailing mater on steam vessels,[3] who had been navigating about forty years.[4] He had not had extended experience, as—

> "prior to 1893 '94 what navigating I did was either in the main stream up as far as the furnace and no further or was in through the channel at the south side of Big Island or Zenith Island."[5]

He called the main stream "the channel that passes to the northward of Big Island,"[6] and testifying to the course of the main channel he said:

> "After I rounded Grassy Point I stood in about northwest or a little north of northwest by the furnace, one chimney of the furnace and a white building up on the side hill acted as a range for this stretch, and I ran up

[1] Minn. brief, p. 206.
[2] R. p. 642, fol. 990.
[3] R. p. 651, fol. 1007.
[4] R. p. 652, fol. 1008.
[5] R. p. 653, fol. 1010.
[6] Id.

there nearly to the furnace and then swung around on the starboard wheel to the left past the furnace dock, took this same stack and another building over my stern and went out away from the furnace to a little grassy island, past a little grassy island; this grassy island or near there was close by a bar. Prior to 1893 I had been up this channel as far as the furnace with a schooner of limestone and supplies for the furnace but I had never made any attempt to go out through this bar near this little grassy island, but there was some improving done about that time about 1892 or '3, along there in that little spot, I think they did some dredging and in looking around I found this way up, I used to go up that way."[1]

He had also made a number of trips through the cut-off with—

"Very light draught boats, drawing about 4 to 5 feet of water. I might say that we frequently got aground with these boats but of course I have (no) way of knowing whether we were in the best water or not."[2]

As to the character of the banks between Grassy Point and the furnace, he said:

"They were very well defined, very abrupt, dropped off very short from deep water into shallow water."[3]

He testified to one experience which he seemed to locate at the crucial segment of the Minnesota channel, in which he appeared to have gotten into this pocket that runs over toward Fisherman's Island, or as he put it, "probably this little pocket to the west of Grassy Point." Telling of his efforts to find a way through, he said:

"Why, we couldn't go in here any way; we tried and sounded and pounded around and tried every way with the tug but we couldn't go but when it cleared we found a hole from the main channel we come in and we backed out again."[4]

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[1] R. p. 654, fol. 1001.
[2] R. p. 655, fol. 1012.
[3] R. p. 655, fol. 1013.
[4] R. p. 658, fol. 1017.

This experience, the court will recall, was thoroughly corroborated by the Minnesota witness, Charles A. Krause, who likewise said: "we tried that once and got stuck and was kept all night there in the channel or in the grass there."[1] Detailing his experience, he said:

> "Q. Did you try to get through to the west along the line of B?
>
> "A. Yes, sir.
>
> "Q. How far did you go about?
>
> "A. I should judge probably not over a thousand feet.
>
> "Q. And—did you finally have to do?
>
> "A. We turned around and came out the same hole we went in and got into the main channel again.
>
> "Q. Now in going up the short-cut that you have testified to you say you had light draught boats, four or five feet you say?
>
> "A. Yes, sir."[2]

Testifying as to the bar, as to which so much is made in Minnesota's argument—

> "Q. Could you get across that bar above the Zenith Furnace Company at high water, or couldn't you?
>
> "A. I never tried it. I have an idea that you could get across that bar, I think we could have crossed there prior to having the dredging done had we known how to do it at that time and made the attempt.
>
> That bar was a peculiar formation; it was mostly sawdust and refuse from the mills and silt of course from the river bottom and some of this bog, this growth of roots and grass and stuff had stuck in there for some reason, the geographical formation was such as to form a sort of eddy and the stuff floating there had very little specific gravity and I frequently noticed the lead would only show about 12 or 13 feet of water and we would go over with a 14 foot boat. She would stop a little but by working our wheel, dredging we called it, keep working the wheel and the stuff would break up and finally we would work through."[3]

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[1] R. p. 173, fol. 220.
[2] R. p. 658, fol. 1018.
[3] R. p. 659 fols. 1019–20.

It would seem from his testimony that he believed it possible to get through the bar with a 14 foot boat, and while he had not attempted to go through, he reiterated:

> "A. No, but I have an idea now after going up that we could have got through before it was dredged.
>
> "Q. You could have got through with your boats?
>
> "A. Yes, I think we could have kicked the boats through with our wheel. The nature of the bottom was such that it was easily kicked away, sawdust and stuff there."[1]

j. J. P. Burg.

J. P. Burg was born at the head of the lakes, and by reason of the fact that his father had a homestead at the foot of the incline going up the hill to Proctor at West Duluth, which was right below Grassy Point, he often went to Milford, both walking and by boat. His "brother-in-law sailed the tug Nellie Cotton and of course I was a kid and was with him a great deal and they towed logs up and down there different places."[2] When he was twenty or twenty-one, he started firing on tugs and steamboats; used to go up and down quite often, up the St. Louis River as far as New Duluth. He was undoubtedly mistaken in his testimony as to the name of the boat that he navigated in 1878. He identified the main channel:

> "Q. I show you Wisconsin Exhibit number 1 and ask you to examine and ask you to follow the course that you have described as the main channel from the channel south of Grassy Point that you took in going up the river?
>
> "A. This line is all right. That is the main channel.
>
> "Q. That channel with the red line on it, is that substantially correct?
>
> "A. Yes, that is all right.
>
> "Q. And that is the channel that runs between Big Island and the Minnesota line?
>
> "A. Yes, sir. We never had any trouble up here, we

[1] R. p. 660, fol. 1021.
[2] R. p. 663, fol. 1026.

never had any trouble going up the river after we passed Big Island."[1]

On cross examination he testified further:

"Q. You don't claim that you knew where those channels went, do you?

"A. Yes, I do.

"Q. Of your own personal knowledge?

"A. Yes, sir.

"Q. But you never took any soundings?

"A. No, sir."[2]

k. John Ojibway.

John Ojibway was a half breed Indian, we may well assume, with all the traditional Indian instinct and skill in the location of trails and passageways by water or by land. In addition to his inherited instinct, his opportunities for observation were well calculated to give him a thoroughgoing knowledge of the character of the waters, their shoals and channels, and the course of commerce between Grassy Point and Big Island. He had lived at the head of the lakes for forty-nine years, all but ten of his life;[3] had worked on boats "in almost every capacity there is aboard a boat. I wheeled and fired and also ran the engine," and had run on several boats going up the St. Louis River, beginning in 1876, which he fixed as the year of the Hayes and Tilden election; he had worked for Mr. Wheeler, "towing scows of rock, delivering them down here at the Superior entry" on the tug Amethyst.[4] But prior to this time he had had occasion to visit an uncle who lived at Bear Island, up above Big Island, and it had been the custom to visit him two or three times a season.[5] He had gone up on excursions often.[6] He had gone up

[1] R. p. 668, fols. 1033–4.
[2] R. p. 673, fol. 1041.
[3] R. p. 675; fol. 1044.
[4] R. p. 676; fol. 1045.
[5] R. p. 677; fol. 1046.
[6] R. p. 678; fol. 1047.

on the Rambler, when working for Peyton, Kimball & Barber, with whom he worked three or four years "in the closing of the '80's."[1]

And we think more important than his experience in this respect was the fact that he had had special occasion and opportunity to know the channels, by reason of having assisted in taking the soundings throughout the very zone of controversy with Mr. W. B. Silvey, who, the court will recall, assisted in making the survey of the river from Dec. 5, 1884 to Jan. 10, 1885. And we think it cannot be too often emphasized that this survey was made pursuant to the instruction of Congress, to make an examination or survey, or both, of "Saint Louis Bay and Saint Louis River from Connor's Point, Wisconsin, and Rice's Point, Minnesota, to foot of first falls,"[2] and that the engineer in charge had reported "the distance surveyed" as "the boundary between the States of Minnesota and Wisconsin."[3] It is, we think, little to be presumed that these engineers came into the community at a time when the symptoms of the present controversy were all absent, and wilfully and arbitrarily closed their eyes to all local sources of information, and defiantly went ahead and mapped a main channel, when the main channel was somewhere else, and that such survey and report could have been made without protest or objection, remonstrance or notice on the part of these "bluff old captains," who supposedly never made use of the channel—some never knew of its existence, and others thought it in the nature of a "slip running into Milford." All the inherent probabilities concur in establishing the main channel to be where the engineers found and mapped it.

Mr. Ojibway was confused as to the chief engineer, who was

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[1] R. p. 679; fol. 1049.

[2] Sec. 9, ch. 229 (River and Harbor Act of 1884); Vol. 23, U. S. Stat. L., p. 151.

[3] Ann. Report of Chief of Engineers, 1885, Pt. III, p. 1961.

Mr. Parkinson and not Gardner, as he stated.[1] His cross examination as to his experience in sounding especially served to confirm the truth of his assertion in this respect. Asked if they took the soundings by moving in a direct line from the Wisconsin shore to the Minnesota shore in a boat, he stated it was in the winter time and the soundings were all taken on the ice. When they struck a channel, he was instructed to call out to the man with whom he was working, who put the sounding in his book.[2] The accuracy of his testimony in this respect is further confirmed by the fact that, while he did not undertake to fix the year, he stated that he assisted Mr. Silvey just after Mr. Darling came to Duluth. As appears from Mr. Darling's testimony, he came to Duluth in 1884, but he did not have charge of the soundings taken in December, 1884 and January, 1885, although "quite familiar with the work that was going on that winter."[3] Mr. Ojibway said:

> "I handled the pole for sounding, I done all the sounding. * * * we used a line sometimes where it was too deep. I had a 22-foot pole but there were spots along in different places where the 22-foot pole wouldn't reach bottom."[4]

He found the deepest water in the same channel in which he went with his boats. He said of the channel:

> "In places it was very bold; in places again she would come out flat."[5]

With these qualifications for testifying, when asked to locate the course of traffic, he said:

> "A. Why, the main channel.
> "Q. The main channel?
> "A. Yes, sir.
> "Q. Was it deep water?
> "A. Yes, sir.

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[1] R. p. 682; fol. 1053.
[2] R. pp. 692–3; fols. 1070–71.
[3] R. p. 601; fol. 922.
[4] R. p. 682; fol. 1054.
[5] R. p. 683; fol. 1055.

"Q. How deep was the water in places?

"A. Well, I couldn't say just exactly but it was—the Danforth and the Rambler both were eight or nine feet draught and we found no trouble but just this one spot of water where the current caught her bow and drifted her over to the starboard side.

"Q. Where was that?

"A. Just about the time we got into Milford channel.

"Q. But you went over there right along, did you, with these boats?

"A. Yes, sir."[1]

He testified, as had many other witnesses, to the fact that the channel was lined and defined by weeds, which grew at the side. He and the other witnesses were confirmed by the printed record of travelers from an early date. Asked as to the cut-off, he said:

"A. Yes, I am familiar, that is, I know what it is.

"Q. What kind of boats took that channel?

"A. Well, my recollection is there was nothing but canoes and small boats. There was one spot there it was utterly impossible to go at the time I spoke of because of shoal water."[2]

Asked as to keeping in the main channel, he stated, "We couldn't get out after we got in it," and continuing:

"A. Why, if you did you would get aground, and often we just pulled the slack of the tow line and let the current bring the logs down in the current so we wouldn't pull the logs up on the bank, just strain enough so she would follow the current as we came along down so we wouldn't pull our boom apart."[3]

They could follow the channel by the current when the water was high, after a freshet or a rain. He testified that he knew where boats generally ran in the '70's and '80's. And continuing:

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[1] R. p. 680; fols. 1050–51.
[2] R. p. 681; fol. 1052.
[3] R. p. 681; fol. 1053.

"Q. Did you frequently see other boats in that channel?

"A. Yes, at that time I speak of there was no other way of going there, never would attempt to go otherwise than this main channel. They go there different now after the improvement."[1]

Locating this channel by the map, he said, "The red marks follows it as near as I can give it."[2]

Much effort is devoted to discrediting the testimony of Ojibway, because he did not know that the two Merritts, McDougall, and Krause were navigators. We have already seen that Mr. McDougall and the Merritts, especially Leonidas Merritt, were unable to contribute any particular experience as to their navigation themselves; but the head and front of the assault upon this witness is devoted to showing that he was in conflict with Martin Wheeler. In all earnestness we suggest to the court that Mr. Wheeler's testimony, which was confined to a period prior to 1881, was most general in its character; that he had never made any soundings as had Ojibway, and that he was unable to indicate any advantage that would result from an attempt to flounder over the course B–C, because doing so would "shorten it some but not so much,"[3] and he characterized his experience with that channel as "all guess work."[4]

And "this Chippewa Indian,"[5] "this Indian,"[6] "the poor half breed," "the half-breed Indian,"[7] "John Chippeway or Ojibway,"[8] had at least the merit of being entirely in accord, in his conception of the main channel of the St. Louis River, with the Minnesota legislature, the Chamber of Commerce of the city of

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[1] R. p. 684; fol. 1057.
[2] R. p. 685; fol. 1059.
[3] R. p. 954; fol. 1490.
[4] R. p. 957; fol. 1494.
[5] Minn. brief, p. 224.
[6] Id., p. 225.
[7] Id., p. 228.
[8] Id., p. 234.

Duluth; the Department of Engineers of the U. S. War Department, and the Congress of the United States itself, while no trace or evidence of the discovery or existence of the so-called Minnesota channel appears ever to have been found by any disinterested observer, and outside of the printed record in the present law suit, we submit, there exists no hint or suggestion of this channel of myth and mystery.

1. J. A. Curo.

J. A. Curo had made his home in West Duluth thirty-one years "near the base of Grassy Point," within four blocks of the water." Had "built about the first house in there."[1] Apparently, he had left the vicinity only the year before his testimony. Prior to that he had run a boat livery at West Duluth for about seventeen years.[2]

Counsel for Minnesota evidently perceived little advantage arising out of his long residence in the immediate vicinity of the waters and his facility for observing the course of traffic, for we are told "his shore residency was his chief claim to competency to furnish testimony as to the channels" in the river in the early days.[3] He is referred to as "a shore sailor."[4] We are told: "This navigator's observations were all taken from the shore."[5] This court evidently entertained quite a different view as to the importance of actual residence and opportunity for observing the course of traffic, because in another boundary case it said:

> "It is also noticeable, in connection with this evidence, that none of the witnesses (Hunter may be an exception) ever lived in the vicinity of the island, or remained there any length of time, and that all the knowledge any of them ac-

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[1] R. p. 700, fol. 1082.
[2] R. p. 704, fol. 1089.
[3] Minnesota brief, p. 235.
[4] Id. 236.
[5] Id. 236.

quired of the state of the river was obtained by passing up or down it at different times, either on flatboats or steamboats."[1]

This witness could see the river from his house for four or five years after his location, in '88 or '89. He could see boats as they went up the river and came down and observed that "they navigated on the west side of the flat and bay up there in the St. Louis River next to the Minnesota shore, * * * after they turned Grassy Point."[2]

Then followed these significant questions and answers:

"Q. Was there a channel there?

"A. There was the St. Louis River there.

"Q. You called it the St. Louis River?

"A. That's what we all called it in them days, St. Louis River.

"Q. Do you know whether it was deep water?

"A. It was the deepest water we had around there anywhere.

"Q. How deep was it?

"A. Well, it would run all the way from ten feet to thirty, thirty-two; I don't think there was anything shallower than ten feet from Grassy Point up to within a mile of Fond du Lac.

"Q. Have you run boats up the river yourself?

"A. I have in the last eighteen years, that is small boats drawing five feet of water, launches."[3]

The witness was therefore in exact accord with the terminology so frequently employed in the reports of the engineers of the War Department, who likewise used in their descriptions, not the term "main channel" or "a channel" with reference to this particular course, but the designation "St. Louis River" and that, as demonstrated and borne out by the men of

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[1] *Missouri v. Kentucky*, 11 Wallace 395, at p. 403.

[2] R. p. 701, fol. 1083.

[3] R. p. 701, fol. 1083–1084.

science who testified, was the real character of this so-called main or Milford Channel. It was "the St. Louis River," while the balance of the water in the vicinity, in essence, represented a permanent overflowing of the banks of the river. Such was the testimony of Lawrence Martin,[1] Associate Professor of Physiography and Geography of the University of Wisconsin, and was likewise the testimony of Mr. E. F. Bean,[2] Assistant State Geologist for the State Geological Survey of Wisconsin, and Assistant Professor of Geology in that Department at the University of Wisconsin.

We concede very freely and fully that the witness was confused and mistaken in his statement that the new channel, or the present channel, had been dredged in 1892. He was, of course, confusing the two dredgings. There was, however, nothing about the earlier dredging, as we have seen, that in any way interfered with, obliterated or obscured the preexisting channels, the material dredged having been transported, as we understand it, beyond the "Entry" and deposited in the lake, so that if the so-called Minnesota Channel was available prior to 1893 it continued available down to 1902.

It is not important, therefore, whether Mr. Curo's observations as to the nature of the channel, other than the main channel, were all taken prior to 1893 or whether they continued down to 1902.

If his testimony was true of one time, it would be true of the other. We think, then, the following question and answer are peculiarly pertinent, whether they describe conditions before or after 1893:

> "Q. Could you see from your house whether the boats that went up the river there, up and down the river in the '80's, were taking that channel that you speak of that is quite deep, or not?

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[1] R. p. 347, fol. 502.
[2] R. p. 388, fol. 570.

"A. Well, if I could see them, if they wasn't I would see them standing on a sand-bar or mud flat. They had to be in that river or they couldn't go. That is, any boat that had any draft to it, anything over five or six or seven feet, they had to go in that river, St. Louis River. Grassy Point, they went right in where the Carnegie Coal-Dock is now. Carnegie Coal-Dock is about two-thirds aross the river. The Zenith Furnace was going to build right out, and I believe when I was working for them there was a protest put in not to close that river because they had no way of getting up above there."[1]

Asked as to where the ice first melted and went out in the spring, he stated in the "St. Louis River," meaning "the navigated channel that come down by the Minnesota shore." This channel he indicated as "the red line which is marked H" on Wisconsin's Exhibit 1.[2] We submit that whatever his qualifications may then have been they had this one decisive advantage, and that was that they were absolutely and entirely confirmed by the surveys and examinations of the Department of Engineers, whose soundings are in accord with his statement: "any boat that had any draft to it, anything over five or six or seven feet, they had to go in that river, St. Louis River."[3]

m. H. V. Desimval.

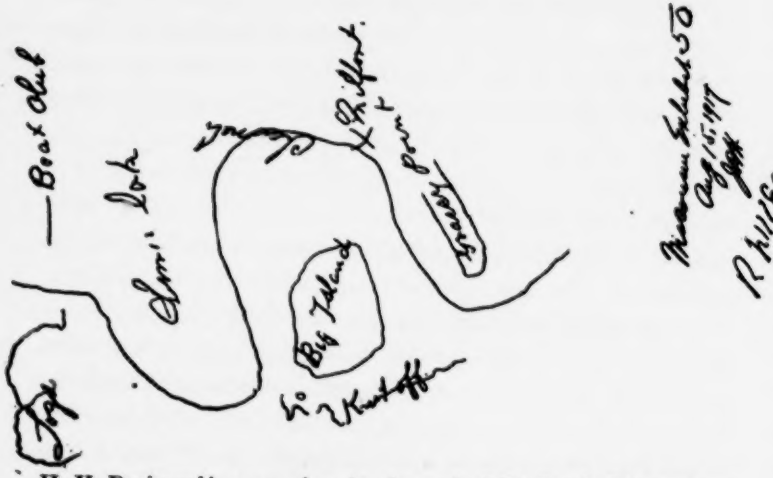
H. V. Desimval was a son of the preceding witness of the same name. The first eight years of his life were spent at Milford. It would be natural to assume that among his earlier recollections would doubtless be the passage of boats up and down the river in the vicinity of his father's dock, located upon the main channel. Apart from this, in 1888, 1889, 1890, and 1891 he did some lumbering in Wisconsin above Spirit Lake, and he had occasion to come down the river "about twice a year with

[1] R. p. 702, fol. 1085.
[2] R. p. 703, fol. 1087.
[3] R. p. 702, fol. 1085.

rafts. In the summer of '88, rafted two rafts."[1] His experience would average about seven or eight rafts in all, of logs. Apart from this, his experience was "nothing any more than small boats or riding with the pleasure boat."[2] These logs were towed by the Nellie Cotton, and the witness rode on the logs in the wake of the boat,—

> "watching them logs; watching them rafts from getting mixed up out of the channel and getting into obstructions that is along the channel."[3]

They "always called it the main channel" of the St. Louis River, and this was the channel down which he came.[4] He likewise reduced his conception of the course taken to paper, and the crude outlines of the channel appear as Wisconsin's Exhibit 50, confirming in every way the testimony of the government soundings and reports.



H. V. Desimval's map of main channel of St. Louis River above Grassy Point.

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[1] R. pp. 717–8, fol. 1110.
[2] R. p. 718, fol. 1110.
[3] R. p. 718, fol. 1111.
[4] R. p. 719, fol. 1112.

Much is sought to be made of the fact that there was a conflict between his testimony and that of Captain Jeffry. And this Captain Jeffry, the court will recall, brought confusion to the ranks of Minnesota's witnesses by testifying with great force and directness to the fact that whatever course was taken above Grassy Point, it was necessary to cross the so-called bar opposite Milford, which there has been so much earnest and labored effort to picture as an obstruction that rendered navigation of the Milford channel impossible. Upon the basis of Captain Jeffry's testimony, there was no reason or motive for undertaking the course from B to C, except the scant saving of about 900 feet of distance. And if the maps and soundings are to be believed, his testimony involves the proposition that boats habitually left the security of water averaging 20 feet in depth, to cross a shoal contemporaneously mapped as having approximately 4 feet of water—a course described by some of the Minnesota witnesses as poorly defined at best.

And finally, we submit that the impressions of the course taken would be quite as likely to be vivid and accurate in the mind of the man riding upon the raft of logs in the rear of the boat, trying to keep them from going aground at the sides of the channel, as would be the impressions of the man navigating from the security of the deck. We are quite content to leave with the court any question of conflict in the testimony of Mr. Desimval with that of Captain Jeffry.

n. Joseph Jacobs.

An examination of the testimony of Joseph Jacobs, leads to the conclusion that he must have been an unusually fair, disinterested, well informed, and in every way exceptional witness. Notwithstanding a considerable portion of his testimony is debonairly characterized as a "lot of twaddle."[1]

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[1] Minnesota brief, p. 252.

We find, first of all, that he was a resident of Duluth, where he had lived for fifteen years; that he had been at the head of the lakes for forty-six years; his business was that of a tug captain, prior to which he had been a "linesman, deckhand, firing on a tug."[1] His first experience was on the tug Merchant. On such a tug a deckhand is learning the business of a pilot, differing in that respect from the work of a deckhand on a regular vessel. He worked on this tug Merchant in 1887 and 1888. She was then towing sandstone from Fond du Lac to the sandstone dock on Minnesota Point about a block north of the canal. She made about two trips a week, two round trips. He was engaged in this business during the period of vacation at school, when he was sixteen years old, an age which we suggest would not ordinarily be characterized as that of "a very young boy."[2] Prior to this time he had run away from school and ridden up on the Maggie Carroll. His work started "along some time in June, about the first of June, around the first of June * * * any-where between June the 25th and the first of September until school period started again."[3] That was true of both seasons of 1887 and 1888. We assume that it was two years later that he was on the John McKay, although the record makes it read 1900, instead of 1890, for we find, in continuing his experience he next states: "In '91 I fired a tug, the James Bardon towing rock from up there," from Fond du Lac.[4] At this point, apparently, his experience ended as he did not return to the river until 1897. His absence from '91 to '97 would, of course, account for the fact to which he testified, that he knew of no dredging being done in the main channel,[5] and did not know of the existence of the bar there,

[1] R. p. 729, fols. 1128–9.
[2] Minn. brief p. 251.
[3] R. p. 730, fol. 1130.
[4] R. p. 731, fol. 1131–2.
[5] R. p. 741, fol. 1148.

as he would necessarily have been away during the time that all of this work was projected and carried out.

While it has no relevance or bearing as to his experience, the court will note, as a basis for determining the justice of the reflection attempted upon his testimony in the Minnesota brief, that he testified specifically as to his work for the Jeffrys:

"Jeffry Brothers Tug Line. 1906, 1907, 1909, 1911."[1] And on cross examination, he stated that the Jeffry Brothers for whom he worked were "Sime and Bill"; as to Jack's being a member of the firm, he said:

> "He was before I worked for them. It was formerly—Jack was in it—Sime and Jack were the managing owners, and then Jack, I understand, sold his interest to Bill."[2]

So that the court will see that he never testified to working for the Jeffry Brothers at all until 1906, and at no time did he work for Jack Jeffry; and without any comment whatever, in view of this condition of the record, we submit the statement of counsel:

> "He also testified that he was working during all this time for Jeffry Brothers, Captain Jack Jeffry being one of the owners and being the captain. The latter testified that he always came down the channel A–G–B–C on defendant's Exhibit 1."[3]

His testimony, then, had to do with experiences during the four years of his life, from the age of sixteen to twenty, when his mind would be most likely to receive a permanent impression as to his experiences. It appears that in 1887 and 1888 he held the wheel "about two-thirds of the time."[4] In going up the river, he testified:

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[1] R. p. 731, fol. 1133.
[2] R. p. 737, fol. 1141.
[3] Minn. brief, p. 252.
[4] R. p. 732, fol. 1133.

"Well, we always went through the cut-off. • • •Come back the old channel."[1]

He went through the cut-off because "it was shorter," and came back the main channel—

"Because I was always led to believe from Captain Osborne that there wasn't water enough there for boats, and it was a dangerous place to fetch a loaded scow down."[2]

He stated he came down the main channel.

"Q. You called it the main channel?
"A. Yes, that is what I was always told it was.
"Q. And was it generally known as the main channel?
"A. As far as I knew anything about it, it was."[3]

And in answer to a question, he contributed this extremely lucid and accurate statement of the course beyond Grassy Point:

"It runs in a northwesterly direction until you get to full and by the Zenith Furnace and then you make a circle there and go back out to a little island as I presume is about twenty-five hundred, two thousand or twenty-five hundred feet off the shore and you make another circle the other way, it is kind of a compound curve, you come back into the old brick yard, and then you go right on out again almost over to Big Island or within about a thousand feet of Big Island and then you come into Spirit Lake and from Spirit Lake you make a gradual turn around up Big Island—southerly end of Big Island."[4]

Testifying as to their course along Grassy Point, he said they ran about 400 or 500 feet from the Minnesota shore. Continuing, he testified:

"Well, speaking of Grassy Point them bulrushes there make almost right up to the point, the bulrushes come right to the bank of the channel and we used to run within 75

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[1] [2] R. p. 732, fol. 1133.
[3] R. p. 732, fol. 1134.
[4] R. pp. 732–33, fol. 1134.

feet of the bulrushes. Now I never was up that river only when the bulrushes were up. As a matter of fact I don't believe I could go up there because that was practically the only guide we had to guide us up and down the river with the exception of one range after we turned Grassy Point to go over to the furnace there was an old black shack up on the hill, we used the smoke stack of the Zenith Furnace with the north end of that shack, just when we could see daylight between them, that was the range we went up there on. I couldn' go very far without the bulrushes."[2]

Here again we find the use of the smoke stack of the Zenith Furnace Company as the range. He testified that the Zenith Furnace Company dock and about four-fifths of the Carnegie dock extended over the channel.[2] He likewise gave this accurate and intersting description of the cut-off channel:

"We come up by Grassy Point here about 600 feet right straight along up this channel here and when we got about over 600 feet we lined up to a point about 400 feet north of that little island and we went across right straight there to within a line of about 200 to 250 feet of that little island and then we swung off up here, up above that point about 250 to 300 feet of that little island until we opened up Pokegama so that you could look up in there. And then we steered right straight up Pokegama here or followed the bulrushes, there were bulrushes right up to within the southerly bank of the channel going into Pokegama, came out there, oh, I guess about a thousand feet and you ran up until you almost hit the bulrushes and then followed the bulrushes and went through the cut-off."[3]

Describing a portion of the so-called cut-off channel, he stated:

"When we got to the little island from about 300 feet north of the northerly line of this little island I think, until we got through up at this end it was full of dead-heads and

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[1] R. p. 733, fol. 1135.
[2] R. p. 733, fol. 1136.
[3] R. p. 734, fol. 1137.

logs, it felt like, the tug going over them and striking them."[1]

In this he was confirmed by those witnesses who testified that this portion of the cut-off channel was generally known as the corduroy road. He denied the existence of any such channel along the line B–C. Asked as to taking the main channel northerly of Big Island, he said: "Why, there was no other channel to take."[2] And again:

"Yes, that is the only two channels, I know is the one through the cut and the one around by the furnace."[3]

His cross examination developed affirmatively that Mr. Osborne, not Jack Jeffry, was the owner and captain of the Merchant. The two boats, Maggie Carroll and Merchant, were light draught boats drawing about 6 feet. He did not know the depth of the scows, although he did not think they drew as much water as the tugs. The James Bardon drew about 6½ or 7 feet. Asked again about the channel B–C, he said:

"I never see anyone go through there, not unless—no, not unless it was gasoline boats since then, in the last five or six years I have seen gasoline boats go across from the end of this island across in there into the new channel. The new channel comes along there and cuts a big chunk of that off."[4]

He testified that to the best of his recollection there were rushes continuously on the banks of the main channel at the point C. He stated:

"It was open water from B to C but at C there was bulrushes as I recollect."[5]

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[1] R. p. 735, fol. 1138.
[2] R. p. 735, fol. 1139.
[3] Id.
[4] R. p. 737, fol. 1142.
[5] R. p. 739, fol. 1145.

Again he illustrated his knowledge of the situation by detailing the cut-off along a different line from that marked by Mr. Darling, and as illustrating his fairness, we submit these questions and answers:

"Q. Then you would say this black line from the point D is entirely wrong?

"A. Oh, no; oh, no, absolutely no; because I didn't use that channel, I wouldn't criticise another man and say that he was wrong.

"Q. Come back to this other plat. You say that there was not a channel that could be used by boats along from A to B and B to G and G to C, that there wasn't a channel that could be used for boats drawing six to seven feet of water?

"A. No, I am not saying there wasn't a channel that couldn't be used, I am simply telling you the channel that I used up there, because a man could probably go up there and he would probably go somewhere where I never went. I am telling you where I went."[1]

He was then shown the Meade map,[2] which pictured conditions something like thirty years earlier than the time as to which he testified, and was asked to examine the soundings.

"Q. * * * Do you know any reason why you couldn't go through there with your boats

"A. Not at all, just simply didn't know there was a hole there, that is all.

"Q. You simply didn't know it?

"A. No.

"Q. And wouldn't it be the best channel to take, the shorter channel to take with boats drawing six feet or less and with scows drawing six feet?

"A. Yes, if we knew it was there, yes, sir.

"Q. Well, now, as a matter of fact all you are giving us is the channel you and Osborne took at that time?

"A. Yes, that is what I am giving you. That is what I learned.

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[1] R. pp. 739–740, fol. 1146.

[2] Minn. Exhibit 1.

"Q. That is all you know?
"A. Yes, sir."[1]

o. A. E. Bischoff.

A. E. Bischoff was a man sixty years old, and as a boy in the early '70's went up the river hunting and fishing, over to Milford, "what was known as the Burg farm then, used to go over there and stay with the boys."[2] presumably the same Burg who had previously testified to living on a farm in the vicinity of Grassy Point. His experience of this character he described: "Every summer I was up there dozens of times." The first time he "went up there with any boat of a size was in '81." This was the tug F. L. Danforth. He went as engineer. James Sullivan was captain. He "piloted him because he was a stranger at the time." He "just made three or four trips up there. • • • up beyond Big Island, over Devil's Elbow. • • • went to swing a boom across the short cut." When he was up there in the vicinity of Milford with his row boat he came down the channel" in case of a northeast wind. It always gave us shelter there under the lee of the Minnesota shore."[3]

There was a well-defined channel between Milford and Grassy Point. "It was close to the Minnesota shore." Zenith furnace dock and the Carnegie coal dock extend over part of it. He directed Mr. Sullivan to take "the main river channel. • • • There was all kinds of water in the river channel, you would have all the way from eighteen to thirty, thirty-five and thirty-seven feet some places."[4]

He testified to the cut-off channel south of Big Island: "Shallow-water boats used to" take that course.[5] He had been

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[1] R. p. 740, fol. 1147.
[2] R. p. 742, fol. 1151.
[3] R. p. 743, fols. 1151–1152.
[4] R. p. 744, fol. 1153.
[5] Id.

up on the tug Nellie Cotton, in '82, which the court will recall was sailed by Mr. Burg's brother-in-law.[1]

He testified to experience in '83 with a small tug with which he came through the short cut; "missed it on the inside and • • • swung on the bank and run the scow on the bottom."[2] He stated that his experience "was confined to one or two trips in 1881 and a few trips in 1882 and one trip in 1883,"[3] that is with boats of any size. The others were with "row boats or small little boats."

Before leaving the testimony of this witness, we desire to call the court's attention to the portion of his testimony quoted in the Minnesota brief relative to the dredge which pulled him off when he ran aground in the cut-off. Counsel state:

> "He never explained to us what a dredge was doing up there in '83, when there was no improvement of any kind done by dredge until 1893."[4]

The court will find that the explanation was given by Minnesota's witness, Captain Jeffry, who testified:

> "They dredged the channel there way up right abreast of Little Pokegama, came into Spirit Lake. • • •
> "That was in about 1877 or '8, I guess. I can't give you the date exactly, not now."[5]

So that the witness is amply confirmed, not discredited, by reference to this dredge that had come ahead and through the upper end into Spirit Lake. It will be noted that Captain Jeffry was unable to give the date, and the inference is that the witness was correct in this, as well as his other testimony.

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[1] R. p. 663, fol. 1026.
[2] R. p. 746, fol. 1156.
[3] R. p. 749, fol. 1162.
[4] Minnesota brief, p. 254.
[5] R. p. 997, fol. 1560.

p. William F. Thompson.

William F. Thompson was a steamboat captain who had lived continuously in Duluth since 1870. He had been a captain since 1886; held a pilot's lecense in 1886; had been navigating boats continuously since that time. Prior to that he was learning to be a pilot. The first boat of which he had been captain was the tug Nellie Cotton, on which he started as cook in 1881; became master in 1887, being aboard the vessel eight years in all. She was a little steel tug operated by Captain Jeffry. Mr. Thompson became her master in 1887. The next year, 1888, he sailed the tug John McKay, a small tug.[1] He "towed logs up the St. Louis River" with her; the Nellie Cotton "was doing everything in the way of tugging;" principally "towing logs." Most of them came from just above New Duluth at the sorting gap. He did not state definitely the number of times they went up there, but it was quite often. Asked as to the course, he stated:

> "It would depend upon what way the captain figured when we come down. If it was night we would come down the old main channel. If it was daylight we would come down through the cut-off if we didn't have a big raft."[2]

He described factors which might determine the course taken above Grassy Point:

> "If it was a northeast wind and high water I would go through the cut-off. • • • If the wind was southerly and the water low I would take the old deep water channel."[3]

He testified that he was first shown this channel by Captain Jeffry in the early '80's, and he had navigated it ever since, more or less.

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[1] R. p. 809, fol. 1259.
[2] R. p. 810, fol. 1261.
[3] R. p. 812, fol. 1263.

"Q. Is that the channel that boats usually took in going north of Big Island?

"A. Well, that is the only channel we could take if you drew over eight feet of water.

"Q. Is that the channel that boats usually took when you went north of Big Island?

"A. The old original channel?

"Q. Yes.

"A. Yes, sir.

"Q. There was another channel, you say, that went south of Big Island?

"A. That was the cut-off.

"Q. Yes. What boats used that channel?

"A. Well, anything around seven or eight feet at the time of high water, would go through there. There was lots of water at the cut-off but after you go down about that flat island it was shoal. There is where the trouble was.

"Q. Was the main channel marked in the summertime by grass or rushes?

"A. Yes, sir, more or less.

"Q. Pretty clearly defined?

"A. Yes, sir."[1]

He testified that the Goodman "was a medium-sized tug • • • she drew about 8½ feet of water."[2] She was operated in the early '90's. He took the cut-off with her—

> "Just odd times going through here, you know, just as it was convenient. If the raft was large and wasn't narrowed up we would go through the cut-off, or go around by Spirit Lake by Swenson's and the old main channel."[3]

Asked as to his experience in operating deep water boats that drew 16 feet of water in the later '90's, and as to the channel taken, he said:

"A. There was only one channel to take, sir.

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[1] R. p. 312, fols. 1263–4.
[2] R. p. 813, fol. 1265.
[3] R. p. 814, fol. 1266.

"Q. When you went north of the island there was only one channel?

"A. Yes, sir.

"Q. And that was the main channel?

"A. Yes, sir."[1]

The following is his testimony with reference to navigation with Captain Jeffry, the man who had first shown him the main channel, and whose previous testimony had completely blown up the Minnesota theory that there was a bar or obstruction across the Milford channel that prevented its navigation, and who by doing so had removed the only plausible reason or theory that could possibly be assigned for the navigation of the line from B to C.

"Q. You remember that channel well. Now, as a matter of fact, when you sailed with Captain Jeffry isn't it a fact that you went up the channel innumerable times from G to B and B to C and then on up north of Big Island?

"A. We never went this channel at all.

"Q. From B to C?

"A. No, sir.

"Q. Don't you think that Captain Jeffry would know where he went when he was captain of the boat?

"A. He ought to.

"Q. Quite an active man, wasn't he?

"A. He was, at that time.

"Q. How long since you have seen Captain Jeffry?

"A. I should judge it was two months.

"Q. Is he sick now in the hospital?

"A. That's what I heard.

"Q. Do you mean to say that you never went on the line, the channel marked B to C?

"A. Well. I wouldn't say positive that we never went. He might have gone over that route when I was down in the cabin or some place else in the boat or down in the fire-hold; I wouldn't say we never went there."[2]

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[1] R. p. 814, fol. 1267.

[2] R. pp. 816–7, fol. 1270.

The conventional effort to confuse the witness was made by showing him the line of soundings as they had existed thirty years before his experience, as shown on the Meade map. The map was placed before the witness, and he was asked concerning them, notwithstanding the fact that there was a plenitude of contemporary soundings in evidence to which reference might have been made, and which showed a general shallowing throughout the area of from 2 to 4 feet, so that the available depth from B to C at the time under consideration ranged from 4 to 6 feet at most. Questioned first as to the saving in distance, he doubted whether it would be any nearer.

> "If you are going to make all these S's out of it, it wouldn't be any nearer. It's all growed up here with bulrushes all the way along. This was all grass."[1]

Testifying specifically as to this channel, he said:

> "I don't remember ever going that channel with Jeffry but I have been across that channel, picked up logs. I have been over that channel, but not with the Nellie Cotton. I don't say that I remember going through there with Jack Jeffry through that channel."[2]

Asked an argumentative question as to whether all boats had not run the channel from B to C, he said:

> "I don't see why they should. We never did. We used to take the old channel over in here."[3]

Further:

> "Q. Was there any difference in the way you navigated after that dredging was done?
>
> "A. I never noticed any."[4]

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[1] R. pp. 817–8, fol. 1271.
[2] R. p. 818, fol. 1272.
[3] Id.
[4] Id.

He testified going over the line B–C with the tug Jeffry, drawing about 6 feet.

> "This whole country was all full of logs and all above Grassy Point, all full of logs."[1]

He had been up there all one season "picking these logs up."

> "A. We used to go right into the bulrushes, into the grass and push logs out of the grass and back away with them, get them into the main channel."
>
> • • • • •
>
> "Q. When you were going up and down the river making a trip up the river or down the river from up the river did you take that course then?
>
> "A. No, Sir.
>
> "Q. You then took the main channel you have spoken of?
>
> "A. Either took the cut-off or around the main channel."[2]

Again he testified to the conditions that made possible navigation in the case of a high wind blowing in from the lake.

> "A. We had to always consider it; sometimes had a northeast wind you would have eight feet of water down by flat island; you could go over it easy; that was shorter to go that way."[3]

Referring to the present channel, he characterized it as a better and straighter channel than the old one, but prior to this dredging, asked as to whether there was sufficient water in the so-called Minnesota channel, he said:

> "A. No, there wasn't at all times.
>
> "Q. Look at it.
>
> "A. No; them soundings might have been taken when there was high water.
>
> "Q. Might have been taken when there was high water?
>
> "A. Might have.

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[1] R. p. 819, fol. 1274.
[2] Id.
[3] R. p. 820, fol. 1275.

"Q. Might have been?
"A. Yes, sir."[1]

Of course, a real explanation was that the soundings which were presented to him had all been taken at a time when the water was much deeper, but he was not to be confused. In spite of the argument, he stated:

> "I know the water that it used to be through there. You couldn't get along here."[2]

As to the Minnesota channel, he said:

> "Small boats used to take that channel."[3]

He was then asked a hypothetical question, based on the assumption that the soundings were correct, and he made a very intelligent answer:

> "A. A boat drawing 8 feet of water you can't run her in 8 feet of water at any gait at all. You can crawl over it but you can't get any speed or get anywhere. It's a good deal better to go around to this water and make ten miles an hour than to go along here about two miles and a half."[4]

Testifying to conditions under which he might have taken the cut-off, he again stated:

> "If the wind was northeast and the water high we could duck right in there, but if you take ordinary water like it is now, haven't had much rain, we wouldn't bother that channel because we would be bumping along going up and down all the time, hitting the bank. That is, if you were trotting her right along.
>
> * * * * *
>
> "We used to go through there just at odd times, but

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[1] R. p. 821, fol. 1277.
[2] R. p. 822, fol. 1279.
[3] Id.
[4] R. p. 822, fol. 1278.

usually, why, we never was—unless it was night-time, we came around the main channel."[1]

Picturing his experience in the cut-off channel, he said:

"A. I never sounded. We had water enough as long as there was—as we were towing something and going along slow you can crawl along over six or eight inches of mud.

* * * * *

"Q. * * * Do you mean now to testify that in that channel you had to crawl along?

"A. At spots, yes, sir, you would hit the bank, hit the bottom.

"Q. Hit the bottom?

"A. Sure."[2]

Driving home the proposition that the trifling gain of distance could not possibly have been any inducement to lead navigators to undertake the hazards of the Minnesota channel B–C, he testified to the difference in conditions:

"Q. In the main channel the bottom of your boat didn't come very close to the ground, did it, in the main channel?

"A. The old original channel?

"Q. Yes.

"A. No, not as long as you kept in the channel and had good water.

"Q. Was that an advantage in keeping in the main channel and taking the main channel course?

"A. Well, just as we wanted to go along, I told you. Sometimes if we wanted to hurry down and trot her along we took the main channel.

"Q. You could travel in what is now the old channel, what you call the main channel, better than you could the other way, couldn't you?

"A. Sure.

"Q. Your boat would make better speed?

"A. Certainly, wouldn't go anywhere near the bottom, wouldn't pull the bank right after her.

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[1] R. p. 823, fol. 1279.

[2] R. p. 823, fol. 1280.

"Q. When a boat runs over shallow water the water will pull up at the stern, won't it?

"A. Yes, or whenever she gets in a narrow channel and goes at any speed she will drag out on the banks.

"Q. That pulls down the speed, doesn't it?

"A. Certainly does. That is why the Government has got signs up all along in their channels different places, about six miles an hour; tugs go along, boats go along full gait they would wash the bank right in again."[1]

He reiterated that it was Captain Jeffry who first taught him the location of the old channel.[2]

We have gone into the testimony of this witness in some detail, because of the statement of Minnesota that it was "full of foolish statements, contradictions,"[3] Our examination leads us to the conclusion that the court will find these strictures wholly unwarranted, and we join in the request of counsel for Minnesota that his testimony be compared with that of Captain Jeffry; not merely that, but we confidently invite comparison of his testimony with that of any other witness who testified on either side. We think the court will be convinced that there was none who exhibited a clearer or more intelligent understanding of the physical situation, and of the factors and conditions that contributed to successful navigation of the waters there.

q. George E. Mann.

George E. Mann had run on a ferry boat called the Merryman in 1890, which belonged to his father, and subsequently about 1895, he had gone up on some other boats. All of these boats ran in the same channel. He described the course:

"A. Why, it took a northwesterly direction after it made the turn at Grassy Point going towards the Blast Furnace;

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[1] R. p. 824, fol. 1281–2.
[2] R. p. 825, fol. 1283.
[3] Minnesota brief, p. 265.

northwesterly direction, I should judge, and gradually turned and went more of a westerly direction after it got near the Blast Furnace and across the Blast Furnace.

"Q. Did it keep a course pretty close to the Minnesota shore above Grassy Point?

"A. Yes. That is, of course there was rushes and bulrushes and such as that; I don't know what you call the shore like; that's near Grassy Point. After you passed Grassy Point you couldn't go so near the shore there on account of rushes and bogs like, but you get around near the Blast Furnace you came nearer to the shore.

"Q. Did the Merryman run in the same channel that these other boats that you speak of ran later, the 8 and 9-foot boats you speak of?

"A. Yes."[1]

He stated that he had taken the cut-off a good many times with light draught boats, and gave this very accurate picture of the cut-off channel:

"A. Right where the cut-off leaves the main part of the river, what I considered the main part of the river, is sufficient water there for most any tug till you get by what they call the Devil's Elbow, and after you get down where the bay begins to widen out, why, you haven't got sufficient water for a boat that draws over 7 feet of water, without touching the bottom."[2]

r. H. C. Bellinger.

The next witness, H. C. Bellinger, who was United States Inspector of the Engineer Department, had likewise ridden on the Steamer Merryman, stating:

"I went once across what they called the cut-off, on the Steamer Merryman, and that is the first time I knew a boat could go through that way, except the small boats."[3]

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[1] R. p. 828, fol. 1287.
[2] R. p. 830, fol. 1291.
[3] R. p. 834, fol. 1297.

He had been in the service since 1890. His business was

> "Making soundings in wintertime, locating wharves, docks, shore line, see that the harbor rules and regulations are enforced, looking up evidence in regard to violations"[1]

Testifying as to the dredging in 1893:

> "Q. Do you know whether or not that dredging was done in what was then the navigated, generally navigated channel?
>
> "A. Yes. There was some bars, what we call bars, at that time, at different points, and they obstructed navigation to some extent and they were removed by dredges, and these bars were from a point opposite the south of Spirit Lake down to, possibly to where the Carnegie dock now possibly is; different points, the exact locations I don't remember.
>
> "Q. Do you know the channel that boats usually took in the St. Louis River above Grassy Point along in the early '90's?
>
> "A. I knew the ones we went. I knew the channel that I usually ran up on.
>
> "Q. What was it?
>
> "A. It was what we called the main channel; the main northerly channel; the one along the Minnesota side of the bay was the one we usually took.
>
> "Q. Is it the channel that is now obstructed by the Zenith dock and the Carnegie dock?
>
> "A. It was.
>
> "Q. Was that known as the main channel of the St. Louis River?
>
> "A. So I took it, yes."[2]

His knowledge of the channels prior to 1893 was "what anybody would know if they observed to see where they were going."[3]

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[1] R. p. 832, fol. 1293.
[2] R. p. 832, fol. 1294–5.
[3] R. pp. 833–4, fol. 1296.

Then:

"Q. Did you know there were several channels there in upper St. Louis Bay above Grassy Point that were used by boats?

"A. I didn't know there were several. I knew there were two."[1]

Questioned specifically as to the suppositious Minnesota channel, he testified:

"Q. Did you ever know of any boats going up the channel A to G, G to B, and B to C?

"A. No, sir.

"Q. Never knew that the water was deep enough so that a boat drawing 8 feet could go up there?

"A. No, sir, not from B to C.

"Q. You don't know whether it was or not?

"A. I don't know.

"Q. You never heard of a boat going there?

"A. Not to my knowledge."[2]

s. John Morgan.

John Morgan was a man sixty-nine years of age, who had been sailing boats as a master for thirty-nine years. His experience in the navigation of the St. Louis River came at a time that is especially pertinent to the present inquiry, and his experience was such as to make his testimony of real value to the court in fixing the channel. It is true that he was ill, but not so sick as Captain Jeffry, whose testimony was actually taken for Minnesota while he was in the hospital. Mr. Morgan testified that he—

"sailed the Hammond a couple of years in 1889 and '90, running up the river here, towing stone. * * * Hauling stone to Number 1 slip in Duluth * * * from Fond du Lac."[3]

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[1] R. p. 834, fol. 1296.
[2] R. p. 835, fol. 1298.
[3] R. p. 839, fols. 1305–6.

He ran all of the seasons of 1889 and 1890 as master. The next season he was on two different boats. In 1891 and 1892 he was on the George P. Savage—

> "towing logs for Mitchell & McClure, from the Pokegama, I think they call it, down to the St. Paul & Duluth bridge into the boom there."[1]

He had also gone up and down occasionally with the Odin, a little barge built at Fond du Lac. That was in '92. She drew about 6½ or 7 feet. The Hammond drew "about 7 feet, hardly that." With the Hammond, he—

> "would make a trip and a half in a day; sometimes two trips if the weather was good. Bring down a load and go up and probably get down about half way or such a matter, depending on the weather, and some days I would make two round trips, but I would be coming down in the night then.
>
> "Q. Sometimes you made two trips a day running at night?
>
> "A. Sometimes, by running at night, yes, sir.
>
> "Q. And did you keep that up all the two seasons there?
>
> "A. Yes, sir. We was very busy all the time.
>
> "Q. Was there anyone else hauling rock from Fond du Lac or not?
>
> "A. No, sir, nobody.
>
> "Q. At that time?
>
> "A. Not at that time.
>
> "Q. And you hauled all the rock down, then, from Fond du Lac that came down?
>
> "Q. Those two seasons?
>
> "A. Yes, sir."[2]

His work with the Odin was not a steady thing. Occasionally he used to go up to Fond du Lac. With this experience, which was quite as well calculated to qualify him to testify as the

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[1] R. p. 839, fol. 1306.
[2] R. p. 840, fol. 1307.

bulk of the witnesses who testified on either side, he stated as to the route—

> "Oh, kept right up the main channel. * * * The old channel, yes, the main channel."[1]

Testifying further, he said:

"There wasn't any other channel at that time."[2] He had gone up the cut-off in a light draught boat, the Savage, which was "the regular cut-off." He had taken it "lots of times, but not with any deep draft boat."[3] He had inspected the scene of his early navigation the week before, and asked if the channel was obstructed at the present time, he stated:

> "Well, it's not there any more, the old channel; they have built across the old channel. I suppose may be, oh. probably 7 or 800 feet clean across it entirely. * * * Take it from the Blast Furnace and the other is put across the channel, I don't know what you call it."[4]

Asked again as to the general course of navigation, he stated:

> "any boat that drew any water did; a launch could go down the other way or some light draft boats, but the boats all took that channel."[5]

He testified to the current running "up and down again just depending," and as to the channel, he stated it was—

> "Marked by weeds when they growed up. You could run right along the bulrushes just as well as you could buoys, and better, in fact, after the bulrushes got up."[6]

His cross examination disclosed an inability to locate himself upon a magnified portion of a small section of the Meade map, introduced as Minnesota's Exhibit 54. This, we think, the

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[1] R. p. 841, fol. 1308.
[2] Id.
[3] R. p. 841, fol. 1309.
[4] Id.
[5] R. p. 842, fols. 1309–10.
[6] R. p. 842, fol. 1310.

court will not find at all singular, in view of the fact that this enlargement of the map, seen for the first time, does not fairly resemble any other portrayal of the area, and is in fact of a somewhat confusing character. His failure to readily locate himself on such a map without previous experience with it would not weaken or disturb the force of his testimony on direct examination. On the contrary, we think it decidedly strengthened it, and demonstrated his entire familiarity with the whole area above Grassy Point, as it actually existed in his time. He testified first that there was only one channel; that he went the main channel all the time; did not use the cut-off until he had the Savage, and then he had to go there to get to the place he towed the logs.

> "Q. But you didn't consider that a channel?
>
> "A. Well, no, it wasn't at that time. There wasn't water enough, that you could call it a channel in my estimation."[1]

He testified:

> "there was 4 feet, but you know the water raises about 18 inches."[2]

At this point, counsel for Minnesota make the comment:

> "Of course, this was not true, not only as shown by the evidence of all the competent witnesses in the case on either side but the soundings on the Government map show that there was not a word of truth in the statement. He was simply mistaken."[3]

Now then, what was the fact? George R. Stuntz, in his field notes, states:

> "The level of the water in Lake Superior fluctuates between the minimum and maximum between 3 and 4½ feet."[4]

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[1] R. p. 842, fol. 1311.
[2] R. p. 843, fol. 1311.
[3] Minn. brief, p. 267.
[4] R. p. 1032.

And he said about the island:

"It is virtually on the lake level and cannot be drained."[1]

The witness testified that he had often taken soundings on the south side of Grassy Isand, which was his name for the Fisherman's Island. He took them—

"On the south side in order to get a channel for to go up to the Pokegama."[2]

He took soundings and put up buoys. The shallowest place was about 5 feet; sometimes it was four too. The George P. Savage, which he navigated, drew about 5 feet of water, and dragged the bottom. He expressed his judgment that a boat that drew 6 feet could not get through in 1889 and 1890.

Now then, turning to contemporary government soundings, as shown on the Allen map of 1885, we find that the line of soundings running in a general way parallel to this Grassy Island, or Fisherman's Island, shows at its shallowest point just to the left of the meridian line, three soundings, 5.1, 4.6, 5.2, while there are numerous soundings further to the northeast, 5.3, 5.5, 5.3, 5.4, 5.4, 5.4, 5.6. And again, he testified:

"You had rushes on the starboard side going up all the time; that is, after they started to grow."[3]

And again:

"A. The main channel had rushes in it after the rushes grew in the spring, and after that you wouldn't have much trouble following the shore because of the fact the rushes growed right along the bank and you could follow them right along, keep going night or day."[4]

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[1] R. p. 1031. See also *Amer. Assoc. for Advancement of Science*, Proceedings Vol. 18, 1869, p. 205, paper prepared by George R. Stuntz, quoted at p. 67 of this brief.

[2] R. p. 843, fol. 1311.

[3] R. p. 845, fol. 1315.

[4] R. p. 846, fol. 1316.

His testimony,[1] which is characterized as "most confused and contradictory testimony,"[2] comes about to this: he was shown the Meade map with soundings taken approximately thirty years earlier, and asked if he knew any reason why his three boats "couldn't go up that channel where there is nothing less than from 8 to 9 feet the entire distance," and answered, "Well, they must have dug it out since I went there," which, in view of what we have found, was a ready and obvious enough retort, because, as seen, in 1884, Parkinson had found no soundings there that he thought worthy of record at all, while, as shown on Wisconsin's Exhibit 29 and on Wisconsin's Exhibit 31–E, Darling had found no soundings there in 1891. In 1895, and 1896, so far as the record shows, natural conditions were still unchanged, and as appears from Exhibit 29, the soundings running from Grassy Island or Fisherman's Island to Grassy Point averaged approximately 4 feet. Naturally enough, when asked as to 8 feet of water in that channel to the north of Grassy Island, he said, "That would be in the main channel, boss."[3] Again, queried still more vigorously as to a reason why he could not go over this suppositious channel with boats drawing 7 feet, he answered according to his information and recollection:

> "There wasn't any other place you could go, only in the main channel, when I was here."[4]

Finally, pointing to the map, he said:

> "A. Now this looks all right to me for the old channel in there.
>
> "Mr. Gard: He points to what is shown there as the old channel.
>
> "Mr. Fryberger: There is nothing shown as the old channel.

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[1] R. pp. 848–9.
[2] Minn. brief, p. 268.
[3] R. p. 848, fol. 1319.
[4] R. p. 849, fol. 1321.

"A. That's what it looks like to me and I can't look at anything else that seems anywhere in line with my ideas. I can get aboard of a boat right now and take her from Duluth up to Fond du Lac and back again and take her the old channel, that is, except what they took away from the old channel."[1]

And on redirect examination he identified the main channel, and the same was marked "H" in red ink on Minnesota's Exhibit 54.[2]

Again:

"Q. Did you know of those soundings in there to the north?

"A. No, I did not.

"Q. Nine and ten feet?

"A. Nine and ten feet.

"Q. Nine and ten feet on that red line?

"A. I see a ten-foot mark there.

"Q. Did you know of those soundings?

"A. No, sir.

"Q. You didn't know there was such deep water in there?

"A. No, I didn't.

"Q. Never heard any mariner say there was such deep water in there?

"A. No, I used to take lots of them up there.

"Q. That is fellows that couldn't get along without your help?

"A. Couldn't get along without my help; and pulled them off a lot of them on Sundays when they were coming down."[3]

Surely the court will not consider his testimony impeached by failure to find 9 and 10 feet of water where no such depths existed, and his statement that he "never heard any mariner

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[1] R. pp. 849–50, fol. 1322.
[2] R. p. 851, fol. 1324.
[3] R. p. 850, fols. 1322–3.

say there was such deep water in there'' sustains his testimony, because in truth and in fact there *was* no such deep water in there.

t. G. W. Ward.

Mr. G. W. Ward, whose steamboat experience began in 1876[1] and had continued down to the time of the trial, just previous to which for nine years he had been steamboating on the Mississippi,[2] was another witness of extended experience in the waters in question, whose residence and interests presumably had been identified with Duluth and not Superior, and who was at the time of the trial a resident of Minnesota. His experience on the St. Louis River began ''in the spring of '81 • • • making occasional trips to Fond du Lac'' on the Minnie Lamont, an open boat of about 45 to 50 feet. He was ''supposed to fill wheelsman and linesman; that is, tend to the lines and assist with the wheel. • • • She was towing scows from Fond du Lac to Superior entry and Duluth.''[3]

He would go up—

> ''Sometimes once a week, sometimes twice, and then may be it would be two weeks before she would make another trip. • • • Counting the time during the whole season, figure I would put in about a month.[4]

He was ''on her off and on that way for two or three seasons.'' He made ''not over two or three trips in '83.'' He had also made two or three trips on the Pridgeon in '82 and '83; one was taking the Minnie's place. The next one he was on was the Rambler. He would ''go up there sometimes twice, sometimes go up three times during the week.'' He thought that

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[1] R. p. 851, fol. 1325.
[2] R. p. 857, fol. 1335.
[3] R. p. 853, fol. 1329.
[4] R. p. 852, fol. 1326.

was in '84 or '85. On the Rambler, he fired, handled the engine on his watch, and wheeled her. He likewise made three or four trips with the Mollie Spencer to the Fond du Lac Boom, running down to the Duluth Lumber Company below Grassy Point. Next he ran on the Nellie Cotton in '83, '84, '85 and '86. He wasn't positive. He fired, wheeled, lined, and handled the engine sometimes, this principally in the lake or the lower bays. She towed logs from Fond du Lac to Kimball & Barber's mill.

Apparently he had traveled with the preceding witness, John Morgan, as he testified to being up on the Hammond and the Odin, both boats which Morgan had handled, and confirmed Morgan's testimony that they were handling rock. He had also gone up on the Merryman.

On the basis of this very considerable and extended experience, he was naturally able to testify to the "course that these boats took above Grassy Point." And after describing his course, he stated:

> "A. We always called it the long channel. The other was known as the canoe route, the short-cut or cut-off. We never attempted it with these big boats to go through; always went what was known as the main channel, the St. Louis channel; that's what it was called.
>
> "Q. St. Louis River channel?
>
> "A. St. Louis River channel.
>
> "Q. Is that what it was called?
>
> "A. That's what it was called among the boatmen."[1]

And as to the present obstructions in the channel he testified:

> "A. The Carnegie dock, it takes in very near the center of the dock goes through very near the center of the dock. Blast Furnace dock, it cuts off the corner of the superstructure work; that is where it is built up high with the timbers and stuff, then she turns right there; that's

[1] R. p. 855, fol. 1332.

partly in the current, that Blast Furnace dock. • • • That is the old channel. That is the original St. Louis channel."[1]

He testified that the Minnie Lamont and the Pridgeon sometimes went the cut-off channel.

"If it was dark they never attempted it. They always went the other way because we could sound with the pike pole and tell whether we was in the river or getting into the—instead of heaving a lead we would take a pike pole, 6 feet or whatever it is. As soon as you would strike the bottom you would sheer away and once in a while you would take your pole on the other side. If you was getting leary you take your pole on the other side."[2]

On cross examination he testified that while he had not had charge of any of the boats *as captain*, he had had full charge of many boats. Shown Minnesota's Exhibit 1, he located the island which they "used to call Muskeg Island or Pancake or Snowshoe," and asked with reference to the line from B to C, testified.

"Q. Did you ever know of boats drawing 8 feet of water or less taking that course when they went up north of the island?

"A. No, sir

"Q. Never knew of it?

"A. No, sir.

"Q. Never heard of it?

"A. No, sir.

"Q. And you were an engineer and fireman during all that time?

"A. Yes, sir. In the '80's we couldn't go through there.

"Q. I said from A to G, G to B, and B to C.

"A. A boat drawing 8 feet could not go through there. I will swear that.

"Q. Did you ever get stuck in it?

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[1] R. pp. 855–6, fols. 1332–3.

[2] R. p. 856, fol. 1333.

"A. I have seen boats time and again try it.

"Q. Did you get stuck on it?

"A. I never went in there to get stuck. I kept clear of it. I have been in and sounded that whole harbor.

"Q. You seem to be very positive about this matter?

"A. Well, that's through there, through that way, near that island.

"Q. That is, when you say, 'that' from A to G, and G to B, and B to C, you say you never saw boats go through there?

"A. That there is Pancake Island. I never seen one that went through there unless it was drawing about 4 feet or 5 feet of water."[1]

This simple, straightforward, accurate statement of facts, we suppose, is one of those "incoherent contradictions and statements which cannot be true."[2] No mention is made of the fact in the Minnesota brief that this is the third witness who traveled over the same course with Captain Jeffry, and whose recollection contradicts that of Mr. Jeffry, with reference to the course from Fisherman's Island to the extremity of Grassy Point. And surely it cannot be that all of these witnesses were mistaken, and Captain Jeffry, in his weak and ailing condition correct, especially when under his testimony there was no conceivable reason for taking the channel B–C except as a mere matter of saving from 900 to 1,000 feet of distance, a very inconsiderable matter when the greater advantages of depth and definiteness in the main channel are borne in mind.

u. John A. Bardon.

John A. Bardon, a member of the prominent Bardon family, who appear to have sustained much the same relation to Superior as the Merritt family did to Duluth, was called as a witness. At the time of the trial he occupied many positions,

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[1] R. p. 858, fol. 1336.

[2] Minn. brief, p. 270.

which evidenced the confidence and respect of his community. His primary business had been other than navigation, it is true, but he had held a pilot's license since 1887 and had owned many boats, and he named seventeen or eighteen which he had owned individually or had a part interest in.

His first actual ownership was in '83. "That was the Mary Martini, the ferry," which drew ordinarily between 6 and 7 feet of water, and he had owned boats at all times since 1883.[1] While he had been up on excursions and small boats from the time that he was able to remember, his first employment was in 1887, "on the Minnie Lamont, a little boat that was operating at that time."[2] Prior to that time he had been up on various boats, "Along in '72, '4, somewhere along there the Kesota, the Keeves, the Frost, the Furo, there was a number of boats ran up at that time." He had been on the Stillman-Witt when Victor Desimval, whose testimony has been quoted, was on the boat, in the '70's.

Continuing his experience with the Minnie Lamont, he stated: "I used to be pilot, you might say."[3] He then testified to the old captain who had first shown him the channel, to the various old captains who showed him the channels, meaning James Newton, Captain R. G. Coburn, and Captain Hibbard, and he testified without objection that these captains showed him what they considered the channel the boats usually ran.

> "A. They followed the outline of Grassy Point running practically north towards the mainland, following the old channel, an dit is shown on the Meade map."[4]

That was called "just the main channel or the channel. That was the only deep water channel that I knew anything about."[5]

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[1] R. pp. 865–866, fols. 1347–1348.
[2] R. p. 868, fol. 1351.
[3] R. p. 869, fols. 1352–1354.
[4] R. p. 870, fol. 1355.
[5] R. p. 871, fol. 1355.

Asked as to the extent of his navigation, he stated:

"A. Oh, that is pretty hard to say. All the time since. All through my life I have been up and down. Some seasons a great many times and some only a few; I don't think there has been a season, probably, that I haven't been up some way or other."[1]

His smaller boats did "little odd jobs picking up logs and so forth."[2] Testifying to the course taken by Captain Shea with the tug Rambler, he stated:

"A. Why, I know he took the main channel."[3]

Again he testified that Captain Hibbard was the "the first that spoke of the main channel."[4]

As to the cut-off, he stated:

"They could go through there, any light draft boat could go through. The channel was narrow in some places, but ordinarily easy."[5]

As to the reason for adhering to the main channel northerly of the island, rather than cutting across anywhere, he said:

"Why, the reason that I know of or could think of would be on account of the weeds you would encounter and deadheads and slabs and stuff that always lodged in where there are weeds and, too, it was easier running in the river in the deep water."[6]

In towing gravel in the '90's, he stated:

"We generally came through the south of the island. Sometimes we towed two scows; sometimes towed three.

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[1] R. p. 871, fol. 1356.
[2] R. p. 872, fol. 1357.
[3] R. p. 872, fol. 1357.
[4] R. p. 872, fol. 1358.
[5] R. p. 873, fol. 1358.
[6] R. p. 873, fol. 1359.

Then we would go around the main channel; but with one scow you could slip down through the short-cut."[1]

He identified this main channel upon Wisconsin's Exhibit 1, testifying that it was the channel usually taken except those that took the cut-off. He also testified to the fact that the ice first went out of the main channel, stating "that was always dangerous and people were eternally falling in or losing a horse or something of that kind."[2]

From his cross examination, it appeared that his operation of boats was in the capacity of a proprietor. The natural inference being, we presume, that he had all of a proprietor's interest in safeguarding his property and taking it over such channels and courses only as could be navigated with safety. His cross examination involved the conventional use of the Meade map, with its soundings taken twenty-five years antedating the period of controversy; and upon the purely hypothetical basis that such soundings continued to reveal the situation in the vicinity of the channel B–C, Mr. Bardon admitted that the 6 foot would not have to kick in mud in water 8, 9 feet and 10, saying:

"Not if there was that much water at that time."[3]

He was questioned in some detail about the experience of Minnesota's "Captains," and he said of John Howard:

"He never ran a boat. He was interested in the lease of a boat."[4]

He did not think he had ever piloted a boat up there.

As to Ben Howard, he did not know "of his navigating the

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[1] R. p. 873, fol. 1359.
[2] R. p. 874, fol. 1360.
[3] R. p. 877, fol. 1366.
[4] R. p. 878, fol. 1367.

upper bay to any extent.''[1] He testified further as to the Minnesota channel from B–C, saying:

> ''A. As far as I know we never went beyond the island. We took the channel to the cut-off; as far as I knew that was the cut, and all in beyond there was chunks of reeds and weeds and this floating bog.''[2]

He added:

> ''There was no channel there that was distinct that you could follow. We followed the main channel because it was fenced in.''[3]

He agreed with other witnesses that light draft boats practically all came down the cut-off.[4]

And, finally, he made the statement which, in view of his long experience and extended opportunity for observation, goes far to negative the existence of the Minnesota channel.

> ''A. Well, as I say the small operations did. In the early days all of these excursion boats went around by the main channel. * * * I don't know that I ever saw them going across that way. I have seen boats in there picking up logs. I have seen the Merryman. I have seen the Nellie Cotton.''[5]

His testimony in this respect then absolutely agreed with that of Leonidas Merritt, of Captain McDougall and of Charles A. Krause, although we submit his opportunity for knowing about the situation was more extended than any of these Minnesota witnesses just referred to.

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[1] R. p. 878, fol. 1367.
[2] R. p. 879, fol. 1369.
[3] R. p. 880, fol. 1369.
[4] R. p. 880, fol. 1370.
[5] R. p. 882, fol. 1373.

v. E. F. England.

E. F. England, tug owner and resident of Duluth for forty years, had obtained his first pilot's license in 1888, and had gone up the St. Louis River almost every year since then. He had sailed the Amethyst, the Evaston, and the Lida. The Amethyst drew about 7 or 7½ feet; the Lida about 6½ feet. In the early '90's, he had operated the J. L. Williams. In the '80's he had been up about half a dozen times; with the Lida in '90 and '91 he had made a trip pretty nearly every day.[1] His first trip up the river was about 1885 or '86. He had had other experiences during the '90's, and since 1900. He described his course, saying:

> "We used to head over toward the Zenith Furnace and across where the Carnegie coal sheds is now, is the old river river bed, what we used to call the old river bed."[2]

This was known as the main channel of the river; pretty deep water in it. There were a few spots that were shallow that were dredged out. This he said was known as the generally navigated channel of the St. Louis River. Light draught boats took the cut-off. He stated that the ice melted out first "always in the channel, river channel."[3] Testifying more in detail as to his course in 1890, he said that he took an empty scow up one day and loaded scows down the next, very nearly all summer, but did not always go in the main channel; sometimes went through the cut-off.[4] On his cross examination, he testified to going over the Minnesota channel "once or twice that I remember,"[5] but boats did not use that channel frequently.

The testimony of this witness indicated an experience about

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[1] R. pp. 889–90.
[2] R. p. 891, fol. 1388.
[3] R. p. 892, fol. 1389.
[4] R. p. 893, fols. 1391–2.
[5] R. p. 896, fol. 1396.

as extensive as several of the witnesses who testified for Minnesota, and like Minnesota's witnesses, John G. Howard and C. W. McManus, he testified to having navigated a boat drawing 10 feet. And because he agreed with these two witnesses of their own, counsel for Minnesota ask:

> "Can the Court be expected to take the testimony of a witness of this character as against the undisputed testimony that it found in the Record, consisting not only of competent navigators, but of the Government charts showing the soundings during all these years?"[1]

It is just a little difficult to perceive how Mr. Howard can be "a competent witness,"[2] and Mr. McManus also, while Mr. England is thoroughly discredited, when all three testified to the same thing, except that McManus and Howard enhance the improbability of their story by testifying that they took their boats up the cut-off or over the line B–C which were always 3 or 4 feet shallower than the main channel.

w. William L. Hutchins.

William L. Hutchins apparently had only been up to Fond du Lac twice prior to the dredging. This was with the little passenger boat called the Plowboy, but on that occasion he had gone "from Grassy Point up the St. Louis River, in the main channel."[3] He was shown the channel by R. G. Coburn, to whom other witnesses have referred, and who owned boats in the early day.

His testimony is of the same character, then, as that which this court cited with apparent approval in *Moore v. McGuire*, 205 U. S. 214, 221, where the court says of a witness, "whose personal experience went back to 1839,"—

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[1] Minn. brief, p. 274.
[2] Minn. brief, p. 98.
[3] R. p. 901, fol. 1403.

"He testified that he learned under his father and brother, and that they instructed him that the channel was on the east side in 1812."

Other testimony of the same character may be appropriately noted here. William F. Thompson had testified that he was first shown the main channel by Captain Jeffry; John Stevens testified that Captain Wheeler pointed out the channels to him; Joseph Jacobs contributed the instructions which he had received from Captain William Osborne, the owner and captain of the Merchant; John A. Bardon in the same way without objection added the cumulative weight of instructions which he had received from three different captains and pilots—James Newton, Captain J. J. Hibbard, who owned the Stillman-Witt operated in the early days when Victor Desimval was at Milford, and Captain R. G. Coburn, who had likewise instructed W. L. Hutchins. All of these captains had indicated the Milford channel as the main channel of the river.

x. John Stevens.

John Stevens seems to have been a somewhat illiterate witness, who had not accumulated much, if any, property; but there appears to be no dispute but what he had ample opportunity for learning the location of the channels of the St. Louis River. His father had worked at the Desimval mill, and he had lived at Milford "somewhere about five or six years," when they were shipping lumber from the saw mill.[1] He located the dock as other witnesses had done—

"Right along the edge of the bank of the channel itself or right on to the edge of the channel, the deep water."[2]

They used to take the lumber out on scows; pole it out; load it on schooners. It appears that he had also worked on the tug

[1] R. p. 1002, fol. 1568.
[2] R. p. 1003, fol. 1569.

Amethyst, while Martin Wheeler was towing rock from Fond du Lac. He stated as to his experience:

> "I think I ran on the Amethyst with Martin Wheeler somewheres about three years, probably more; but to the best of my knowledge, to make sure, I know I was there three seasons?"[1]

He had been familiar with the channel, as he stated,—

> "by seeing these heavy draft boats running up and down there when I was a boy before ever I went on to the tug.
> • • •
> "The channel come right out from Grassy Point and down through to what they called the Millford Slough. That is alongside of where the Millford dock used to be, and follow on down."[2]

The boats that loaded lumber at Milford "took that same channel, took that channel from the Millford dock to the Grassy Point and that way." He then gave this very fair and accurate description of the cut-off:

> "There was a channel but it was never called a channel. They could run there by light draft boats, by any boat not drawing much water, because there is a middle ground out in this channel you are speaking about. There is no channel whatever as I know. That is, I never knew it to be a channel. It's a place where they could run, all right, and I have run it myself with light draft boats; but once in a while you would go through there; once in a while you wouldn't—"[3]

He testified that while with Martin Wheeler—

> "We used to take, when we didn't have,—sometimes we used to go up with a couple, two or three scows, and when we had one scow we turned in around that narrowest turn in what we called the Devil's Elbow."[4]

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[1] R. p. 1003, fol. 1569.
[2] R. p. 1004, fol. 1571.
[3] R. p. 1004, fol. 1571.
[4] R. p. 1005, fol. 1572.

Asked if they always took the Milford channel when they went on the north side of Big Island, he stated, presumably testifying to the Minnesota channel:

> "A. We used to take, we used to run the risk of running in around a sort of around in there where this middle ground is and try to get through that place, get through there in order to save time, and sometimes wouldn't save time.
>
> • • • • •
>
> "A. Sometimes would take the Millford channel, sometimes take this cut-off because she didn't draw that much water; she could go any place almost. She would be drawing four feet of water."[1]

And again, as to taking the Minnesota channel, he said:

> "A. Not very often because we was afraid we would run aground and stay there.
>
> • • • • •
>
> "A. When he had three scows he used to take the inside channel, that would be the Millford channel."[2]

And he corroborated Captain Wheeler to the extent of saying:

> "It's no channel but we have run where this middle ground is as I understand where these people have given their testimony there is a channel, that middle ground; they used to go through that way and run the risk of getting through; we used to go through that way sometimes."[3]

We think this testimony must impress the court as giving a fair and intelligent enough statement of the situation. It frankly concedes passage over the Minnesota channel. Apparently the only difference between this witness and Captain Wheeler was in their testimony as to the relative volume of traffic over the three routes. Each testified to their use to some extent, but we submit that the court will find nothing in his

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[1] R. p. 1005, fol. 1573.
[2] R. p. 1006, fol. 1573.
[3] R. p. 1006, fol. 1574.

direct examination to warrant the statement that it was "frequently incoherent and full of nonsense, mere piffle."[1]

On cross examination, he testified that Captain Wheeler himself had pointed out the channels to him.[2]

y. Theophile Dian.

Theophile Dian, also called Jim Young, at the time of his testimony, was an old man of nearly eighty years. He had worked at the Desimval mill for about three years.[3] He testified to the existence of the dock at the edge of the channel, and the manner of loading the lumber upon vessels that came up there. It was a sailing vessel named the Pierpont that came up. He did not know of other boats.

> "Them days boats was very scarce. There was no steamers, no tugs."[4]

After leaving the mill he had run on boats on the St. Louis River; he had been on the tug Agate—

> "pretty near one summer off and on. We didn't go all the time. We were hauling stone for Superior entry."[5]

He had been on the Amethyst; "Alf Merritt was the captain and Martin Wheeler was the engineer.[6] He ran on that boat one season and part of another season. Then he ran a couple of years on a boat called the E. C. Key, as a deck hand. His work with the Amethyst was on the front of the scows, but—

> "when the scow was loaded or unloaded going up the river most of the time I was on the tug, ahead with the boys on the tug."[7]

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[1] Minnesota brief, p. 277.
[2] R. p. 1010, fol. 1579.
[3] R. p. 1013, fol. 1586.
[4] R. p. 1014, fol. 1586.
[5] R. p. 1014, fol. 1587.
[6] Id.
[7] R. p. 1015, fol. 1588.

He stated that the Amethyst towed three and four scows. He "wheeled stone to the scow and piled it," but coming down the river he rode on the boat—

> "The most of the time. Sometimes I stayed on the scow but the most of the time I could get on the tug."[1]

He described their passage along the main channel, as did other witnesses, and while navigating with Martin Wheeler, made this statement as to when they took the cut-off and when they went around the main channel:

> "A. When we would take the short-cut that was the time when it would be northeast wind. It would raise the water. The water would be a little higher. We would take the short-cut if we came down and strike that Elbow in the daytime. Dark, we couldn't make it in the dark. When we would leave Fond du Lac late in the day we followed the main channel by Millford and by Grassy Point."[2]

He also testified to stopping at the Milford dock to get slabs for fuel. Testifying as to the channel that boats usually took above Grassy Point, he said:

> "A. The north channel by the north shore, follow the Grassy Point through, then make a turn and pass in front of Millford close to that little lumber dock."[3]

His cross examination, we think, confirmed the accuracy of his recollection. as expressed in his direct testimony, while on redirect examination he testified to the use of the cut-off and the other channel—

> "I should call that the main channel; whether I am mistaken or not, but that's what I should call it."[4]

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[1] R. p. 1016, fol. 1589
[2] R. p. 1017, fol. 1591.
[3] R. p. 1018, fol. 1592.
[4] R. p. 1024, fol. 1601.

He corroborated other witnesses, that as to the main channel—

> "The rushes was on each side, the grass, the rushes; it was very shallow water."[1]

z. Result of Wisconsin's Testimony.

It thus appears that the witnesses for Wisconsin who testified as to the channels of navigation customarily employed were of the same general average character, as to experience and intelligence as the witnesses who testified for Minnesota and there being some 28 or 29 were about double in number; nor do we think that, viewing the substance of their testimony fairly, there was in the main such hopeless degree of contradiction as argument for Minnesota might lead us to believe. They testified with substantial uniformity that wherever boats of larger draft were employed, the same could at all times with greater safety and convenience navigate the so-called Milford, or main channel when they went to the north of Big Island. And that, we think, is the net residuum of the testimony of Minnesota, that so far as depth of water was concerned, the very shallowest portion of the so-called main or Milford channel was at all times, under all conditions and circumstances, deeper than the shallower portion of any other course that might be taken in going or coming northerly of Big Island Most of the witnesses were apparently more familiar with this Milford channel, or main channel, continuing to the northerly of Big Island, than they were with the cut-off channel, some of them going to the same extremes with reference to the non-existence of the cut-off channel that Minnesota's witnesses did with reference to the Milford channel. It being apparent that, roughly classified, the bulk of traffic testified to by Minnesota witnesses was through the cut-off channel, while the bulk of testimony offered by Wisconsin's witnesses related to navigation in what the consensus

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[1] R. p. 1024, fol. 1601.

of expression by witnesses for both states rather uniformly characterized as the main channel.

7. *Particular consideration of testimony as to navigation from point B to C demonstrates that this line, under the clear preponderance of evidence, did not lie in main channel and was not a portion of the state line.*

We have already seen that from a fair review of the testimony for Minnesota, fourteen of their fifteen witnesses placed the great bulk of all traffic through the cut-off channel, and the one witness who thought it preponderated over the Minnesota course, John H. Norton, had but four months of experience. In addition to him, there were but three witnesses of whom it might be fairly argued that their testimony sustained the claim of the course from B to C to being the main navigated and navigable channel when going to the northerly of Big Island. Counsel for Minnesota were apparently not content with the affirmative showing made by the twenty-five witnesses sworn for Wisconsin, who clearly testified to the course of the main channel, but sought evidence as to their knowledge of the suppositious Minnesota channel, and it will be noted that in practically every instance such testimony as came from Wisconsin witnesses as to the conditions existing in the vicinity of Fisherman's Island, being the course B–C, was not drawn out upon direct examination, and the witnesses for the most part were not questioned upon the subject upon their direct examination, but with the exceptions to be noted, this testimony was elicited from witnesses whom, to that extent, Minnesota had made her own. So that the additional light thrown upon the physical situation adjacent to Fisherman's Island may be fairly characterized as Minnesota testimony.

Walter J. Cayo furnishes an illustration of the manner in

which this information is placed before the court. His attention was not directed to conditions on the line B–C on direct examination at all, but upon cross examination, in response to categorical questions, he testified that he remembered no channel from B to C; that he never had gone over that; that he had never heard of anybody going over it and there wasn't any channel there, and that he had seen rushes growing along that line, in that neighborhood.[1]

James P. Cole, whose qualifications were vouched for in the same way by Minnesota, no question having been put to him upon direct examination, testified that he had "never tried to go up from the northeast corner of Pan-Cake Island over to the Minnesota shore." Asked if he had ever seen boats try to go over there, he testified: "I never saw any in there, no sir, not around in here."[2]

From J. H. Darling they developed on cross examination that no substantial gain could be made in taking their course, "somewhere near three hundred yards or nine hundred feet."[3] And they developed the obvious fact that in the '90's he "found what was shallower water than that exhibit shows," the court noting that, as in many other cases, his cross examination was based upon the unfair assumption that the soundings of the Meade map, taken some thirty years earlier, revealed the situation at the time as to which witnesses testified. Continuing, he said, "I don't think there was eight feet running then"; and more specifically:

> "I remember in the vicinity of that bar near the red line, that first line to the westward of Armstrong Island, along in the vicinity of that there was a shallow bank on each side of the channel which was hard to get across with a moderate

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[1] R. p. 578, fol. 887.
[2] R. pp. 592–3, fol. 908.
[3] R. p. 612, fol. 941.

size launch, shallower than what is indicated there. That shows deep water, there is eight feet or so."[1]

Again, this witness, whom they had adopted, while admitting saving in distance by going through the cut-off channel, stated:

> "If they wanted to take the main channel or go to the north of Big Island the saving in distance would be much less, a thousand feet as against a mile, and they wouldn't take the chances or they wouldn't care to go into shallower water for instance for the sake of a thousand feet only."[2]

Not satisfied with the showing so far made, they elicited the further information, quoted directly:

> "at the same time when I was making soundings over that bar for the purpose of improving it I remember running onto a shallow margin of the channel in that locality which would prevent a vessel crossing it of any depth, I should think it would be not more than three feet of water in that time I mention on that bar."[3]

J. W. Nelson, similarly adopted as their witness, testified as to their channel: "No boats could go through there."[4] This they caused to be amplified with the statement:

> "I have run it myself with a big sail boat but I never saw a steamer go through there. I have seen them go around through this way (indicating)."[5]

Then asked if he had seen boats drawing six feet of water going many times on the channel marked A to G, and G to B, and from B to C, he answered: "No, I haven't." He didn't recollect that he "saw any boats take that course."[6]

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[1] R. pp. 613–4, fol. 944.
[2] R. p. 615, fol. 947.
[3] R. p. 619, fol. 954.
[4] R. p. 633, fol. 976.
[5] R. p. 634, fol. 979.
[6] R. p. 635, fol. 979.

Fred Benson was an exception to other witnesses, as his testimony was brought out upon direct examination. He testified to their utter inability to go over this course.[1]

Joseph Jacobs testified generally on direct examination that there were "only two channels • • • one through the cut and the one around by the furnace."[2] But upon cross examination, the specific information was elicited, not only that he had never gone from B to C, but that he never knew of anybody going there "unless it was gasoline boats • • • in the last five years."[3] Subsequently they drew from him a denial that there was a strip of water to the north of the island, to the best of his recollection, adding, "There was open water there but not where you have that C. That was rushes." And they developed further that "there were rushes continuously on the bank of this channel • • • at the point C."[4]

William F. Thompson likewise testified only on cross examination as to the line from B to C: "We never went this channel at all." He also testified with reference to this suppositious channel that if all the S's were taken out, "it wouldn't be any nearer. It's all growed up here with bulrushes all the way along. This was all grass."[5]

H. C. Bellinger was also questioned only upon cross examination, stating positively that he had never gone the Minnesota channel, and he never heard of a boat going there.[6]

John Morgan testified on direct examination generally as to the main channel, "There wasn't any other channel at that time"[7] except the cut-off. But it was upon cross examination that it was developed that if there was 8 to 9 feet of water

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[1] R. p. 658, fol. 1017.
[2] R. p. 735, fol. 1139.
[3] R. p. 737, fol. 1142.
[4] R. p. 739, fol. 1145.
[5] R. pp. 817–8, fol. 1271.
[6] R. p. 835, fol. 1298.
[7] R. p. 841, fol. 1308.

over the course B–C, "they must have dug it out since I went there."[1]

Upon cross examination of G. W. Ward again, they demonstrated as to their channel: "A boat drawing 8 feet could not go through there. I will swear that."[2]

> "That there is Pancake Island. I never seen one that went through there unless it was drawing about 4 feet or 5 feet of water."[3]

John Bardon had testified on direct examination as to reasons for not cutting across:

> "Why, the reason that I know of or could think of would be on account of the weeds you would encounter and deadheads and slabs and stuff that always lodged in where there are weeds and, too, it was easier running in the river in the deep water."[4]

And on cross examination he said:

> "As far as I know we never went beyond the island. We took the channel to the cut-off; as far as I knew that was the cut, and all in beyond there was chunks of reeds and weeds and this floating bog."[5]

And again:

> "there was no channel there that was distinct that you could follow. We followed the main channel because it was fenced in."[6]

John Stevens, upon his direct examination, made the most favorable showing as to the Minnesota claim of any witness offered:

> "We used to take, we used to run the risk of running in

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[1] R. p. 848, fol. 1319.
[2] R. p. 858, fol. 1336.
[3] Id.
[4] R. p. 873, fols. 1358–9.
[5] R. p. 879, fol. 1369.
[6] R. p. 880, fol. 1369.

around a sort of around in there where this middle ground is and try to get through that place, get through there in order to save time, and sometimes wouldn't save time."[1]

And again:

"Probably sometimes he would take this channel. I don't know as it's a channel. It's no channel but we have run where this middle ground is as I understand where these people have given their testimony there is a channel, that middle ground; they used to go through that way and run the risk of getting through; we used to go through that way sometimes."[2]

And this statement which, we submit, is neither a "mere joke," nor "incoherent," nor "full of nonsense," nor "mere piffle,"[3] fairly represents the conclusion to be drawn from the entire record with reference to the line B–C.

At the risk of repetition, we assert that navigation of this course to the extent claimed by Minnesota during the years immediately preceding the dredging of 1893 was a physical impossibility. Leonidas Merritt testified that "there was more water in the St. Louis sixty years ago,"[4] and that it had "been filled up by silt that came down the river."[5] Mr. Alfred Merritt stated that "there was a good deal of chips and sawdust and one thing and another that would be swept down the river into the bay and settle."[6] Mr. Krause testified to "drift wood, and sawdust, and all kinds of rubbish"[7] and considerable dirt. Mr. McDougall testified to changes in the way of "more of the sediment filling in the bays."[8] Apparently this filling went

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[1] R. p. 1005, fol. 1573.
[2] R. p. 1006, fol. 1574.
[3] Minn. brief, p. 277.
[4] R. p. 102, fol. 102.
[5] R. p. 103, fol. 103.
[6] R. p. 89, fol. 81.
[7] R. p. 179, fol. 230.
[8] R. p. 248, fol. 344.

on to such an extent that it became necesssary for the legislature of Minnesota to impose a penalty for depositing saw mill refuse in the St. Louis River.[1] When the first dredging was done, we find the Department of Engineers reporting:

> "107, 143 cubic yards were dredged through the shoal places between pools. Much of the material removed was saw-dust, the tailings of the lumber mills on the upper river."[2]

That there was a gradual filling up of the channels seems to be borne out by the survey charts as well. Wisconsin's Exhibit 46–A, which was one of the Meade maps, that bears on its face the statement that certain lines were engraved on the map and published May 12, 1874, under the heading, "Sailing Directions," says:

> "No definite sailing directions can be given for ascending the St. Louis River. Vessels drawing over 8 feet can ascend to Fond du Lac, but must be governed in their course by the soundings and the chart."

Thirteen years later, Wisconsin's Exhibit 46–B appears to have been issued, and the original sailing directions are stricken out and the statement substituted, "Vessels drawing not over 6 feet can ascend to Fond du Lac." On the face of the map it is stated, "Aids to navigation corrected to November 1, 1886."

As a result of this filling, which common sense and common knowledge alike indicate would proceed with greatest rapidity where the current was absent, it was inevitable that the situation already fully discussed in connection with the surveys of the later years should have arisen, and that is, that from 1887 to 1893, all the indications are that the depth of water immediately to the north of Fisherman's Island was in the vicinity of 4 feet. We call attention to this gradual shallowing of the

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[1] Ch. 450, Special Laws of Minnesota, 1891.

[2] Ann. Rep. of Chief of Engineers, 1894, Pt. IV, p. 2015.

waters, not at all upon the theory that it resulted in a change of the boundary line, but as bearing upon the credibility of the testimony offered by Minnesota, which tended to establish navigation by boats of substantial depths over this line, and as sustaining the conclusion of Wisconsin's witnesses that such navigation was practically out of the question.

8. *Minnesota's attempt to establish line B–C as part of state line by reason of large amount of traffic which went through "cut-off" channel as far as B cannot prevail.*

With such an overwhelming preponderance of evidence, for the most part developed in the record by counsel for Minnesota, negativing the claims of the line B–C to qualify as a portion of the main channel of the St. Louis River, and indeed rebutting the theory that it was a channel at all, we might well expect that its pretensions would be abandoned. If we may rely upon the plain letter of her brief this in effect is what Minnesota has done. Apart from the injudicious assertion that "all the traffic in the early days was over the channel marked A-G-B-C," in the discussion of the testimony of Mr. Desimval,[1] and a similar statement which may appear in one or two other places nowhere do we find the statement in so many words that traffic which ran all the way from or to A at Grassy Point, and from or to C in the undisputed main channel of the St. Louis River, ever went over the line B–C and on to A, in greater proportion than that which ran via channel "H" or the Milford channel. There is no pretense that the testimony substantiates even a parity of navigation over the line B–C, as contrasted with that which went over the Milford route.

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[1] Minn. brief, p. 238.

a. Language of Minnesota brief.

If the court will examine the language of the Minnesota brief, it will find that the only contention made in positive terms practically without variation, is that set forth in their brief in the discussion of the Bayfield map, where it is said:

> "at that time it is very clear that the 'main, navigated and navigable channel' in the disputed waters in question was substantially, if not identically, as claimed by the State of Minnesota."[1]

Bayfield, the court will recall, delineated the East channel, or the cut-off channel, in the St. Louis River. This Minnesota concedes:

> "Indeed, this survey shows that the State line or main channel would be to the south of Big Island in what is known as the short cut, instead of to the north."[2]

With this introduction, we find continuous repetition of language which may have been studiously designed to avoid the statement of anything as a fact, which the testimony does not at least tend to establish. The letters A, G, B are constantly employed to designate the course of their contended channel. As appears from Minnesota's Exhibit 1 and from our outline sketch, such course stops entirely short at the point where the present dispute begins. Over and over again, it is asserted in substance or effect that "the red line on this map marked 'A,' 'G,' 'B,' shows the channel in the disputed territory claimed to be the 'main navigated and navigable channel' by the State of Minnesota.[3] This conclusion of the Minnesota brief in the terms stated might be proven by the overwhelming weight of evidence, and indeed be conceded, and yet illustrate no issue in the present case. It is this irrelevant line which "every liv-

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[1] Minn. brief, p. 91.
[2] Minn. brief, p. 91.
[3] Id., p. 92.

ing competent witness'"[1] is supposed to have established. This was the line which we are told John Howard testified to;[2] as did Leonidas Merritt, who gave no relevant testimony;[3] and Alfred Merritt, whose testimony as to his own experience favored the Milford channel in the ratio of three to one.[4] All three, "Mr. Howard, Mr. Leonidas Merritt and Mr. Alfred Merritt,"[5] go only to the extent of establishing this "channel G–B." And so that the fallacy involved may not be lost sight of, we are told:

> "Of course, as said before the Bayfield survey showed the 'main, navigated and navigable channel' westerly of Grassy Point to be the channel claimed by Minnesota, being the red line marked on Exhibit 1 as G–B."[6]

And as the argument continues as to what is proven by each witness in succession—Ben Howard,[7] Krause, who negatived the existence of the channel B–C;[8] Albert Swenson;[9] Darwin Stevens;[10] C. W. McManus;[11] Alexander McDougall, who never heard of the line B–C;[12] H. G. Inman;[13] John Jeffry[14]—are all cited to sustain the claims of the channel G–B. That we may not forget the fact that this was primarily the cut-off channel, we are reminded again that Bayfield's channel "went substantially over our line G–B, and above that point took the 'short-cut' to the

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[1] Minn. brief, p. 93.
[2] Id., pp. 96–7.
[3] Id., pp. 101–2.
[4] Id., p. 105.
[5] Id., p. 106.
[6] Id., p. 107.
[7] Id., p. 116.
[8] Id., p. 118.
[9] Id., pp. 120–1.
[10] Id., p. 123.
[11] Id., p. 124.
[12] Id., p. 126.
[13] Id., p. 144.
[14] Id., p. 149.

south of Big Island."[1] And a review of all the testimony leads merely to the "lame and impotent conclusion" that "the overwhelming preponderance of the evidence is that the 'main, navigated and navigable channel' from Grassy Point westerly was on a line marked A–G–B on Exhibit 1."[2]

The net result of this oft-repeated contention, if accepted, would lead to a situation parallel to that expressed by the Supreme Court of Illinois in *Bellefontaine Imp. Co. v. Niedringhaus*, 55 N. E. 184, 188:

> "then the boundary between the state of Missouri and the the state of Illinois would, for a distance of two or three miles, not be the thread of the stream, as the thread of the stream would be wholly in the state of Missouri."

So here, if Minnesota be correct in her claim, the main channel of the St. Louis River from Grassy Point to Big Island lies wholly in the state of Wisconsin.

b. Argument as to law.

This seems to be her theory: the greater volume of traffic ran over or through the cut-off channel, (which for the most part lay wholly inside the state of Wisconsin); some traffic was subtracted from or added to the cut-off channel at the point B, coming or going through a cross channel, or "switch channel" so to speak, and connecting with the undisputed main channel at the point C; the result, irrespective of the volume of such traffic going from B to C is to assimilate that line to the dignity and importance of the cut-off channel, from which such traffic diverged or which it joined. Upon the acceptance by the court of this desperately illogical hypothesis hangs Minnesota's entire case.

Plainly this is not the law.

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[1] Minn. brief, p. 149.
[2] Id., p. 282.

Chicago P. & St. L. Ry. Co. v. Jacksonville Ry. & Light Co., 245 Ill. 155; 91 N. E. 1024, 1027, contains this definition:

> "By 'main track' is meant the main artery for the movement of traffic between any two points."

This, we conceive, may be fairly applied to the instant case as the test which shall control in the determination of the main channel. The question is: Which is the main artery for the movement of traffic between the point C, above Fisherman's Island, and the point A in "deep water opposite Grassy Point?" In the determination of what is "the main artery for the movement of traffic" between these points, obviously traffic or commerce which does not initiate at one point and end at the other is not to be considered or counted in arriving at the total traffic which is to determine their respective standing.

The laws knows no such thing as "splicing" or "tacking" channels. The claims of the line B–C to being the main channel of the St. Louis River must, we submit, stand or fall upon the testimony as to its physical character, and as to the volume of traffic over that line, wholly unaided and unassisted by the amount of traffic proven or surmised that ran merely toward the line and proceeded up the cut-off.

By way of further illustration let us apply this test to the Milford channel. It is very clear that the earliest commercial enterprise upon the St. Louis River, outside of logging operations which required no channel, was incident to the establishment and operation of the saw mill at Milford. There can be but little question that substantially all of the traffic passed to and from the Desimval mill, up and down the main or Milford channel. Boats occasionally went to Fond du Lac. Some of them took the Milford channel, and continued on past the saw mill dock to the head of Big Island; others took the cut-off channel, going to the south of Big Island. Were it an open question now as to whether the north or the south

channel, or more accurately the west or the east channel, the cut-off or the Milford channel, were to be selected as the "main channel," upon the basis of evidence of navigation, to our minds, it is very clear that it would be only traffic which went from "deep water opposite Grassy Point" all the way to the head of Big Island, that could be considered in determining the relative importance of the two channels. We are very clear that such decision must be wholly uninfluenced by the fact that a very large volume of traffic ran to and from the Milford dock. It could not be said that the channel to the north and west of Big Island was the main channel solely upon the ground that by adding the traffic which began or ended at Milford to the traffic which took the same channel, as far as Milford, and continued up above Big Island, the sum total exceeded the total of the traffic through the cut-off south of Big Island. Because local conditions created a great deal of navigation over a portion of the course, such partial use of the channel would not demonstrate any claim that the channel as a whole received a greater volume of traffic than the cut-off channel. Only continuous navigation, traffic which ran from end to end should be taken into account. Upon the whole record we conclude, therefore, the line B–C did not represent any portion of the "main navigated and navigable channel;" that this is in substance admitted by Minnesota, and therefore it is not the state line between Wisconsin and Minnesota.

9. *The scope of judicial notice of historical facts and information appearing in official reports.*

Before bringing the review of the situation to a close, we have thought that a word as to the rules of evidence to be applied by the court might not be inappropriate. We have assumed that the attitude of this court has remained unchanged

since it announced the rule in the early case of *Rhode Island v. Massachusetts*, 14 Peters 210, pp. 257, 262, that in a controversy "where two sovereign states are contesting the boundary between them, it will be the duty of the court to mould the rules of chancery practice and pleading, in such manner as to bring this case to a final hearing on its merits," adding, "the most liberal principles of practice and pleading ought unquestionably to be adopted, in order to enable both parties to present their respective claims in their full strength." And again it is emphasized that they should "come to the final hearing, upon the real merits of their respective claims, unembarrassed by any technical rules. Such, unquestionably, is the attitude in which the parties ought to be placed in relation to each other."

In the belief that the court would welcome information from whatever source available that could in any way illustrate the issues in the present controversy or aid in their correct solution, we have not hesitated to gather material of large volume and variety from many sources, much of which was not formally introduced in evidence. For the most part, the sources of information to which we have thus directed the court's attention are the executive documents of the House of Representatives and of the Senate, more particularly the reports of various major departments of the government as set forth in such documents. Primarily, the sources of information so referred to are: the reports of the Secretary of War containing the reports of the Chief of Engineers, the reports of the Secretary of the Interior containing the report of the Surveyor General, the reports of the Treasury Department embodying the report of the Lighthouse Board. As to all of these we have no slightest question but that they are properly before the court as evidence of the very highest character and standing.

Such practice is sanctioned in *Tempel vs. U. S.*, 248 U. S. 121, where it appears that the court examined the engineer's reports for a period of fifteen years, under the theory that it might judicially notice the same. We have assumed that the propri-

ety of examining such documents was approved in *Alaska Pacific Fisheries v. U. S.*, 248 U. S. 78, 86, 89, and *International News Service v. Associated Press*, 248 U. S. 215, 248. Likewise, in the *Paquete Habana*, 175 U. S. 677, 712, where the Bureau of Navigation Report of 1898 appears to have been judicially noticed. Similar reference to maps and charts is sanctioned in *Moore v. McGuire*, 205 U. S. 214, where the court referred to, p. 224, "other sources of information not put in evidence but partially referred to by the plaintiffs at the argument."

The extent to which the court may properly go in judicially noticing general historical works and historical research by counsel or inferior courts receives happy illustration in the case of *Trenier v. Stewart*, 101 U. S. 797. The state court had there said, *Trenier v. Stewart*, 55 Ala. 458, 465, "the most satisfactory and important evidence on the subject has been hitherto entirely overlooked" and reference is then made to Pickett's History of Alabama and Bancroft's History of the United States and the court determined the case, p. 468, "By the documentary evidence in it, considered in view of the historical and geographical facts of which the court must take notice." Its action in doing so seems to have been expressly sanctioned by this court at page 810 of the opinion, in these words, "Most of these views are much strengthened by historical researches of the court below."

For the most part, the information outside the record is thus presented to the court under the full sanction of the rules laid down in cited cases. In those instances possibly trenching upon or crossing the border line of judicial notice, as in the case of the Perrault narrative, the Johnston correspondence, and the journal of Doty, the evidence presented is purely cumulative in character and in no sense essential to the determination of this case, and valuable merely as it gives the issue the setting of a richer and fuller perspective.

The same may be said as to certain acts of the Minnesota

legislature granting George R. Stuntz a license to operate a ferry between Minnesota and Wisconsin Points, the prohibition of sawmill refuse in the St. Louis River, which are not vital but merely serve to confirm the existence of facts amply proven otherwise. The most important information so presented,— that as to the establishment of the dock line by the Minnesota legislature in 1887, to all practical intents and purposes was a part of the engineer's report. As we have already seen, the petition of the Duluth Chamber of Commerce to the Secretary of War had attached a copy of this "act of legislature"[1] and the harbor lines as finally recommended for adoption and adopted "with some slight changes" were those described by the municipal ordinances and legislative acts cited.

And the changes indicate no substantial departure in the vicinity of Grassy Point.[2] The act of the legislature is specifically referred to as that of February 25, 1887.[3] The net result, therefore, of this important bit of evidence, is merely to make certain that which was already established by irresistible inference apart from the incorporation of the exact language of the legislative act.

It has seemed to us inconceivable that in a controversy of this dignity and character, where both sides can be actuated by only the single motive of having the court fully ascertain and declare its decision in conformity with facts as they were, that there should be objection from any quarter to the presentation of the fullest information, wherever found. Especially must it be true that neither state may legitimately except or object to the consideration by this court of relevant acts of its legislative body, whether the same are formally in evidence or not.

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[1] Rep. of Chief of Engineers, Part IV, 1891, p. 2515.
[2] Id., p. 2516.
[3] Id., p. 2519.

Possibly the court may conclude that some portions of the information we have been at pains to gather lie outside the rather ill defined realm of things judicially known to it. But even in that event we have felt in duty bound to bring the same before the court. If some formal order be required for the adoption of the evidence into the record, or a direction must be given that the same be brought before the court by way of "further proof" under its rules, a fair and accurate view of the extent and character of the information thus available would serve as the only intelligent basis for such order or direction. However arrived at or acquired, it has been our constant thought that the court would be satisfied with nothing less than the possession of all available evidence necessary to do full and complete justice between these contending sovereignities in this important controversy.

10. *Epitome of argument.*

Re-stated, then, the character of the water from the head of Big Island to the "Entry," or mouth of the St. Louis River, is and has been fixed as a river, and not a portion of Lake Superior, beyond possibility of dispute or debate for more than a hundred years preceding the present litigation. The evidence as to this proposition is so definite and decisive that it has not seemed worth while to dignify the attempt of Minnesota to raise an issue in this respect by giving any attention to the proof submitted or arguments offered upon this point.

The location of the main channel of the St. Louis River has been at all times equally free from doubt. The effort to raise a question as to such location is made upon premises just as flimsy and with results that are quite as futile. George R. Stuntz, employed to survey the boundary between Wisconsin and Minnesota, and "specially instructed to traverse carefully the St. Louis River," reported thereon, but left no suggestion that

there existed alternative channels which might qualify as the state line. General Meade, after a detailed and comprehensive survey, indicated the course of the "state line" so plainly that, as a Minnesota witness put it, "Of course, anybody looks at the map can tell that that is the deepest water." Parkinson made his survey of 1884 and 1885 pursuant to direction of Congress, and reported that "from Connor's and Rice's points to the first falls the distance measured along the channel approximates 17 miles," adding that the river formed "for the distance surveyed, the boundary between the States of Minnesota and Wisconsin." Two years later, upon "the eight (8) feet curve of depth of the natural channel of the St. Louis River," through whose center "the boundary between the States of Minnesota and Wisconsin" had thus been indicated, the Minnesota legislature fixed a dock line for Duluth. Not content with this, the citizens of Duluth pressed the adoption of this dock line so running parallel to the state line between Wisconsin and Minnesota upon the Secretary of War. Yielding to their insistence, the War Department in 1890 adopted this dock line along the same "curve of depth on northerly side of the natural deep-water channel of the St. Louis River." "Parallel to and 600 feet from said 8-foot curve of depth" was established upon the Wisconsin side, a harbor line which gave to Wisconsin "riparian owners the right to fill out for the full distance from the shore to the harbor line." That very year Congress again directed a survey of "Saint Louis River from Grassy Point in Saint Louis Bay to Fond du Lac, or the State line between Minnesota and Wisconsin." The survey was made and the lines laid down by Meade and Parkinson were found, or followed as, correct. Large sums of money were expended in the improvement of the channel so surveyed and reported as the state line. And when the growing needs of commerce led to the completion of a new channel in the river, the governors of both states were, by direction of the Chief of Engineers, advised in April, 1903 that

"the original channel of the St. Louis River was the boundary line between the States of Minnesota and Wisconsin * * * which boundary line" was traced upon a map presented to them. Minnesota's legislative committee in 1911 recognized as a thing of definite location, "the sinuous course of deepest soundings," which, despite its impracticability "for ship course in modern commerce," was none the less the state line.

Finally, "the chief map making department" of the federal government has located the state line upon a map made after the area had been "surveyed in cooperation with the states of Wisconsin and Minnesota" in 1913 and 1914. The Director of the United States Geological Survey advises us "that the location of the State boundary line shown thereon is based on the best information available."

With this conclusion, uniform and unvarying from first to last, this court can have no quarrel. It will, we are sure, rest quite content to leave the boundary line where every official authority ever charged with the duty of its ascertainment has found and mapped it.

All of which is respectfully submitted.

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Attorneys for the State of Wisconsin.

until the same intersects the St. Louis River, "thence down said river to and through Lake Superior," etc. The St. Louis River loses its well-defined banks, deep, narrow channel, and obvious current, characteristic of a river, before reaching Lake Superior proper, emptying or merging into Upper St. Louis Bay, which joins with Lower St. Louis Bay and this with Allouez and Superior Bays, all of the same level as Lake Superior and connected with it by a narrow "entry." *Held*, upon historical and other facts and circumstances, that the mouth of the river, as intended by the Wisconsin Enabling Act, is this "entry" or opening and not where the river, in a stricter sense of the term, debouches into Upper St. Louis Bay. P. 279.

At the date of the Wisconsin Enabling Act, Upper and Lower St. Louis Bays, parts of St. Louis River as herein defined, were broad sheets with irregular, indented shores, with no definite, uninterrupted channel extending throughout their entire length, and with no steady current controlling navigation. Such vessels as plied there then and long thereafter, until dredging improvements intervened, moved freely in different directions, and drew less than 8 feet, the depths of the entry from Lake Superior and of the waters of the Lower Bay being too slight for vessels drawing more. The Lower Bay was shallow, with a ruling depth of eight feet, and had no well-defined channel. In the Upper Bay there was a narrow, winding channel near the Minnesota shore with a ruling depth of ten, possibly eight, feet; but a more direct, median course could be and customarily was pursued by vessels for approximately one mile until a deeper channel was encountered, and this was long regarded by officers and representatives of the two States as approximately the boundary. *Held*, that the boundary runs through the middle of the Lower Bay to a deep channel leading into the Upper Bay, to a point, thence westward along the aforesaid more direct median course through waters not less than eight feet deep, approximately one mile to the deep channel to which it leads, and thence, following this, up-stream. P. 280.

In applying the rule of the *Thalweg* (*Arkansas* v. *Tennessee*, 246 U. S. 158), the deepest water and the principal navigable channel are not necessarily the same. It refers to actual or probable use in the ordinary course; and to adopt in this case a narrow, crooked channel close to shore in preference to a safer and more direct one with sufficient water would defeat its purpose. P. 281.

THE case is stated in the opinion.

Mr. W. D. Bailey and *Mr. H. B. Fryberger*, with whom *Mr. Clifford L. Hilton*, Attorney General of the State of Minnesota, *Mr. Oscar Mitchell* and *Mr. Louis Hanitch* were on the briefs, for complainant.

Mr. M. B. Olbrich, Deputy Attorney General of the State of Wisconsin, with whom *Mr. John J. Blaine*, Attorney General of the State of Wisconsin, was on the brief, for defendant.

Mr. Justice McReynolds delivered the opinion of the court.

We are asked to ascertain and establish the boundary line between the parties in Upper and Lower St. Louis Bays. Complainant claims to the middle of each bay—halfway between the shores. The defendant does not seriously question this claim as to the lower bay, but earnestly maintains that in the upper one the line follows a sinuous course near complainant's shore. Since 1893 a deep channel has been dredged through these waters and harbor lines have been established. According to Wisconsin's insistence, its border crosses and recrosses this channel and intersects certain docks extending from the Minnesota shore, leaving portions of them in each State. See *Wisconsin* v. *Duluth*, 96 U. S. 379; *Norton* v. *Whiteside*, 239 U. S. 144.

"An Act to enable the People of Wisconsin Territory to form a Constitution and State Government, and for the Admission of such State into the Union," approved August 6, 1846, c. 89, 9 Stat. 56, described the boundary in part as follows: "Thence [with the northwesterly boundary of Michigan] down the main channel of the Montreal River to the middle of Lake Superior; thence [westwardly] through the centre of Lake Superior to the mouth of the St. Louis River; thence up the main channel

of said river to the first rapids in the same, above the Indian village, according to Nicollet's map; thence due south to the main branch of the River St. Croix," etc., etc. With the boundaries described by the Enabling Act, Wisconsin entered the Union May 29, 1848 (c. 50, 9 Stat. 233).

"An Act to authorize the people of the Territory of Minnesota to form a Constitution and State Government, preparatory to their Admission in the Union," approved February 26, 1857, c. 60, 11 Stat. 166, specifies a portion of the boundary thus: "Thence by a due south line to the north line of the State of Iowa; thence east along the northern boundary of said State to the main channel of the Mississippi River; thence up the main channel of said river, and following the boundary line of the State of Wisconsin, until the same intersects the Saint Louis River; *thence down said river to and through Lake Superior, on the boundary line of Wisconsin* and Michigan, until it intersects the dividing line between the United States and the British possessions." With boundaries as therein described, Minnesota became a State May 11, 1858 (c. 31, 11 Stat. 285).

The present controversy arises from conflicting interpretations of the words—"thence [westwardly] through the centre of Lake Superior *to the mouth of the St. Louis River;* thence up *the main channel of said river* to the first rapids in the same, above the Indian village, according to Nicollet's map." The situation disclosed by an accurate survey gives much room for differences concerning the location of the "mouth of the St. Louis River" and "the main channel of said river." Nicollet's Map of the "Hydrographical Basin of the Upper Mississippi River," published in 1843, and drawn upon a scale of 1:1,200,000—approximately twenty miles to the inch—is too small either to reveal or to give material aid in solving the difficulties. A sketch from it—approximately on original scale—is printed on the next page.

During 1823–1825 Lieutenant Bayfield of the British Navy surveyed and sounded the westerly end of Lake

SKETCH FROM SECTION OF NICOLLET'S MAP.

On original scale: 20 miles to 1 inch.



Superior and the lower waters of St. Louis River. A chart compiled from data so obtained (1:49,300,—4108 feet to the inch) and published in 1828, shows the general configuration and lays the proper sailing course southward of

STATE OF MINNESOTA *v.* STATE OF WISCONSIN.

IN EQUITY.

No. 16, Original. Argued October 16, 17, 1919.—Decided March 8, 1920.

Part of the boundary between Wisconsin and Minnesota is described in the Wisconsin Enabling Act of August 6, 1846, as running westwardly, through Lake Superior "to the mouth of the St. Louis River; thence up the main channel of said river to the first rapids in the same, above the Indian village, . . . ; thence due south," etc. As given in the Minnesota Enabling Act of February 26, 1857, from the opposite direction, the line follows the boundary of Wisconsin

Big Island. Prior to 1865 this was the only available chart and navigators often used it.

The first accurate map of these waters was drawn from surveys and soundings made under direction of Captain George W. Meade in 1861 and is now on file in the Lake Survey Office at Detroit. After being reduced one-half—to a scale of 1:32,000 or approximately two inches to a mile—it was engraved and published in 1865 or 1866. Known as the Meade Chart, this reproduction is accepted by both parties as adequately disclosing conditions existing in 1846. A rough sketch based upon the chart—about one-third of its size—and also a photographic reproduction of a portion of the original map, are printed on succeeding pages [284, 285.]

Minnesota and Wisconsin Points are low narrow strips of sand—the former six miles in length, the latter approximately three. Between them there is a narrow opening known as "The Entry," and inside lies a bay (Allouez and Superior) nine miles long and a mile and a half wide. A narrow channel between Rice's Point and Connor's Point leads into Lower St. Louis Bay, approximately a mile and a half wide and three miles long. Passing south of Grassy Point another channel leads into irregular shaped Upper St. Louis Bay with Big Island at its southwesterly end. Southeast of this Island begin the well defined banks, deep narrow channel and obvious current characteristic of a true river; these continue through many windings to the falls above the Indian village noted on Nicollet's Map.

Meade's Chart indicates: A depth of not over eight feet across the bar at "The Entry." A deep channel through Superior Bay; rather shallow water with a ruling depth of eight feet in Lower St. Louis Bay; eight feet of water on a fairly direct course, about a mile in length, from the deep channel south of Grassy Point and east of Fisherman's Island to the deep water immediately westward of the

bar, about seven-eighths of a mile northeast of Big Island. It further discloses a curving channel along the west side of Grassy Point and thence close to the Minnesota shore and around Big Island, with a depth of fifteen or more feet except at the bar, where there are only ten, possibly eight, feet. To the south of Big Island lies the well-known and formerly much used course indicated on Lieutenant Bayfield's Map.

The level of the water within all the bays is substantially the same as in Lake Superior; such current as exists flows in opposite directions according to the wind and movement within the Lake. The shores are irregular and much indented.

Since 1893 the United States have dredged a twenty-two foot channel through Upper St. Louis Bay and around Grassy Point; thence through Lower St. Louis Bay (where there are two branches) and between Rice's and Connor's Points; thence through Superior Bay to "The Entry" and into the Lake. Extensive docks have been constructed from the Minnesota shore in both the upper and lower bays; those extending southwest from Grassy Point cross the boundary claimed by Wisconsin. The general situation of 1846 continued until long after 1861, but during the last thirty years extensive improvements required for a large and busy harbor have produced great changes.

The complainant maintains that within the true intendment of the statute the "mouth of the St. Louis River" is southeast of Big Island, where end the banks, channel and current characteristic of a river and lake features begin. On the other hand the defendant insists, and we think correctly, that such mouth is at the junction of Lake Superior and the deep channel between Minnesota and Wisconsin Points—"The Entry."

It is unnecessary to specify the many facts and circumstances, historical and otherwise, which lead to the conclusion stated. They seem adequate notwithstanding

some troublesome objections based upon the peculiar hydrographic conditions.

Treating "The Entry" as the mouth of the St. Louis River, where is the line "thence up the main channel of said river to the first rapids," etc.? This must be determined upon consideration of the situation existing in 1846, which the parties admit remained substantially unchanged until after the Meade survey. No alterations now material have come about through accretion or erosion.

The line through Superior Bay is not here called in question. But let it be noted that no vessel drawing more than eight feet could have passed into that bay from Lake Superior; that within "The Entry" there were only small boats of light draft; and that navigation long remained rather primitive.

Lower St. Louis Bay was shallow, with a ruling depth of eight feet, and had no well-defined channel. From the deep water at the southern tip of Grassy Point a vessel drawing less than eight feet bound north of Big Island and beyond could have turned northwest and followed the narrow winding channel near the Minnesota shore with a ruling depth of ten, possibly eight, feet. Or it could have proceeded westward, approximately one mile, over a more direct course with a depth of eight feet or more, until it came to the deeper channel about seven-eighths of a mile northeast of Big Island. This latter course is indicated by the red trace "A, B, C" on Minnesota's Exhibit No. 1—Meade's Chart. For many years officers and representatives of both States regarded the boundary as on or near this line. And, considering all the circumstances, we think it must be accepted as the main channel within intendment of the statute. No current controlled navigation and vessels proceeding in opposite directions followed the same general course.

Both parties say that in 1846 "practically all of Upper and Lower St. Louis Bays between the shores were navi-

gable for such vessels as were accustomed to use said bays at said time for the purpose of navigation, and there was no defined course, or channel, in said bays, which said vessels followed, but, owing to the depth of the water, they were permitted and accustomed to travel across said bays in any direction." For very many years subsequent to 1846 there were no vessels with eight foot draft upon these waters; and probably none of such size regularly plied there until 1890 or later.

The course south of Big Island shown on the Bayfield map was never accepted as the boundary and need not be further considered. Wisconsin's claim to that island is not denied.

Manifestly, from the description heretofore given, the waters between Big Island and Lake Superior were broad sheets without any definite uninterrupted deep channel extending throughout their entire length. Also, there was no steady, controlling current. Such vessels as plied there in 1846 and long thereafter moved with freedom in different directions. The evidence convinces us that as navigation gradually increased prior to 1890, the northerly course in Upper St. Louis Bay commonly followed by vessels going to or coming from points above Big Island was not along the narrow curving channel skirting Grassy Point but over the shorter one near the middle of the bay.

This court approved the doctrine of *Thalweg* as opposed to the physical middle line, in *Iowa* v. *Illinois*, 147 U. S. 1, and has adhered thereto. *Louisiana* v. *Mississippi*, 202 U. S. 1; *Washington* v. *Oregon*, 211 U. S. 127; 214 U. S. 205; *Arkansas* v. *Tennessee*, 246 U. S. 158. "When a navigable river constitutes the boundary between two independent States, the line defining the point at which the jurisdiction of the two separates is well established to be the middle of the main channel of the stream. The interest of each State in the navigation of the river admits

of no other line. The preservation by each of its equal right in the navigation of the stream is the subject of paramount interest. . . . Thus the jurisdiction of each State extends to the thread of the stream, that is, to the 'mid-channel,' and, if there be several channels, to the middle of the principal one, or, rather, the one usually followed." (*Iowa* v. *Illinois*, *supra*, pp. 7, 13.) "As to boundary lakes and landlocked seas, where there is no necessary track of navigation, the line of demarcation is drawn in the middle, and this is true of narrow straits separating the lands of two different States." (*Louisiana* v. *Mississippi*, *supra*, p. 50.)

The doctrine of *Thalweg*, a modification of the more ancient principle which required equal division of territory, was adopted in order to preserve to each State equality of right in the beneficial use of the stream as a means of communication. Accordingly, the middle of the principal channel of navigation is commonly accepted as the boundary. Equality in the beneficial use often would be defeated, rather than promoted, by fixing the boundary on a given line merely because it connects points of greatest depth. Deepest water and the principal navigable channel are not necessarily the same. The rule has direct reference to actual or probable use in the ordinary course, and common experience shows that vessels do not follow a narrow crooked channel close to shore, however deep, when they can proceed on a safer and more direct one with sufficient water.

As we view the whole record, the claim of Wisconsin cannot prevail unless the doctrine of *Thalweg* requires us to say that the main channel is the deepest one. So to apply it here would defeat its fundamental purpose. The ruling depth in the waters below Upper Bay was eight feet, and practically this limited navigation to vessels of no greater draft. For these there was abundant water near the middle line. Under such circumstances

Minnesota would be deprived of equality of right both in navigation and to the surface if the boundary line were drawn near its shore.

A decree will be entered declaring and adjudging as follows: That the boundary line between the two States must be ascertained upon a consideration of the situation existing in 1846 and accurately disclosed by the Meade Chart. That when traced on this chart the boundary runs midway between Rice's Point and Connor's Point and through the middle of Lower St. Louis Bay to and with the deep channel leading into Upper St. Louis Bay and to a point therein immediately south of the southern extremity of Grassy Point; thence westward along the most direct course, through water not less than eight feet deep, eastward of Fisherman's Island and as indicated by the red trace "A, B, C," on Minnesota's Exhibit No. 1, approximately one mile, to the deep channel and immediately west of the bar therein; thence with such channel north and west of Big Island up stream to the falls.

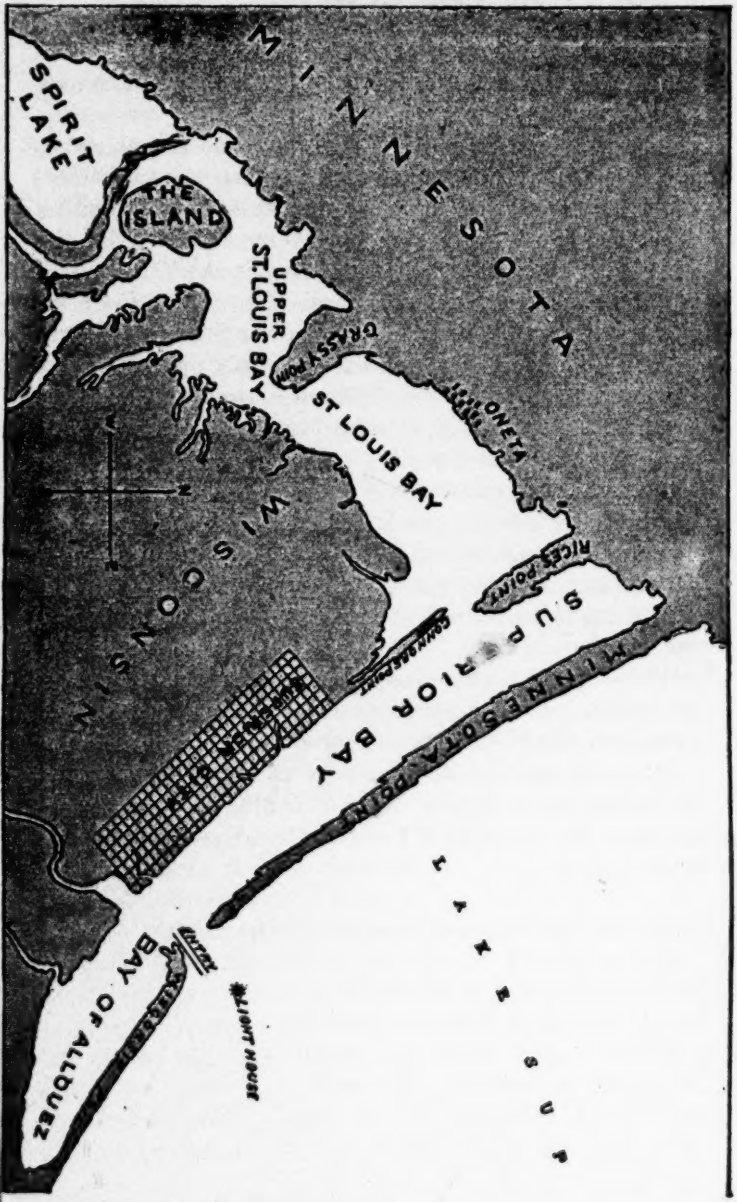
Within thirty days counsel may present a proper decree for carrying this opinion into effect. The costs will be equally divided between the States.

It seems appropriate to repeat the suggestion, made in *Washington* v. *Oregon*, *supra*, 217, 218, that the parties endeavor with consent of Congress to adjust their boundaries.

Mr. Justice Brandeis concurs in the result.

SHORE LINE—SKETCHED FROM MEADE'S CHART.

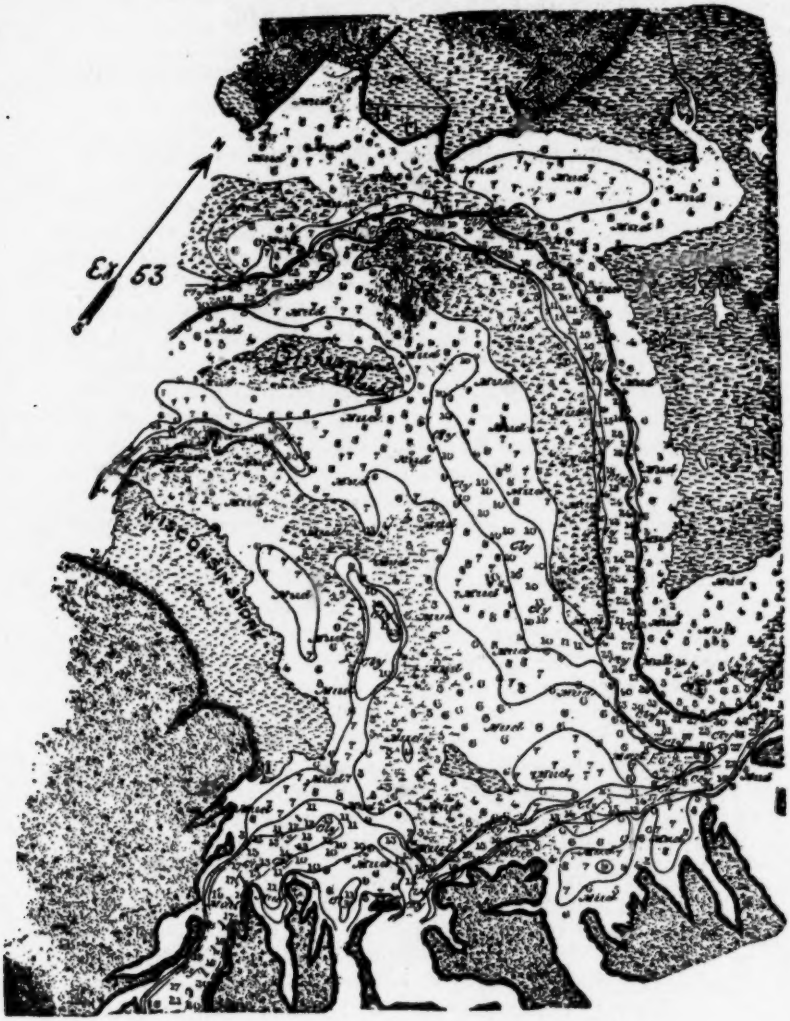
Scale: About two-thirds of an inch to 1 mile.



FROM A PHOTOGRAPH—PORTION OF ORIGINAL MEADE MAP WEST OF GRASSY POINT, ON FILE IN OFFICE U. S. ENGINEERS.

Scale: About 1 mile to 3 inches.

(The words "Fishermans Island" have been added.)



←——————*To The Falls* *To Lake Superior*——————→